

# Tubular Duplicode™

Tubular Key Code and Duplicating Machine

**No. 747XU**

**Exploded View  
&  
Parts List Inside**





# Introduction

## Congratulations

You have become the owner of the most modern tubular key cutting machine available today. This HPC/Scotsman Tubular Key Cutting Machine provides you with the following features:

- Compactness:** The small physical size and light-weight construction allows for easy storage, requires minimum bench space, and makes it ideal for shop or mobile service.
- Simplicity:** The HPC/Scotsman Tubular Key Machine offers fast, easy operation, whether duplicating, or cutting to code. The simplicity of the machine also assures you of many years of profitable, accurate key cutting, with a minimum of required maintenance.
- Universality:** HPC/Scotsman Model #747XU will cut all cuts on the 3 sizes of the most popular tubular keys (indicated below), plus the Fort (GEM) “thick walled” key.
- Durability:** Every part of the machine is designed and manufactured to provide extended life, giving added trouble-free service. Each machine is unconditionally guaranteed by the manufacturer for 90 days. (Remember to fill out and return the warranty card which is provided with this machine).
- Accuracy:** The HPC/Scotsman Tubular Key Machine is a precision machine which has been properly adjusted before leaving the factory. The adjustment of the machine assures you fast, accurate key cutting capabilities. All parts of the machine are manufactured to the highest quality standards, insuring you more years of accurate operation.

### IMPORTANT!

Unplug your machine prior to doing *any* maintenance on it.

## Definitions of Terms

- Tubular Keys:** Also known as “Ace Type Keys” or “Round Keys”. The tubular key is designed to actuate locks which are constructed with the pin tumblers arranged in a circular fashion. The key is constructed with a cylindrical body designed to enter the keyway of such a lock. Various cuts which appear on the circumference of this key allow the pin tumblers of the lock to be depressed to the proper depth thereby meeting a common shearline, and allowing the lock to turn. Proper arrangement and depth of these cuts is critical in order for the lock to be actuated smoothly and efficiently.
- “Standard” Tubular Keys:** This is the most common of the tubular key family. The outside diameter is .375”/9.53mm. Use the HPC/Scotsman 137 (steel) or 137B (brass) key blanks.
- “Small” Tubular Keys:** Less common than the standard size, this key measures .365”/9.27mm in outside diameter. Use the HPC/Scotsman 137SB key blanks.



TUBULAR DUPLICODE™  
747XU



**“Oversize” Tubular Keys:** This key is often referred to as the “UL” or “Certified” key and measures .400”/10.16mm in diameter. The lock which this key actuates is UL Rated and is designed with either 10 or 11 pin tumblers. Three or four of the pin tumblers are actually sleeves around other pins. These sleeves are usually located around the pins in positions 2-4-6 or 1-3-5-7, but could be around any of the 7 pins. The secondary cuts (described below) are responsible for depressing these sleeves to proper depth, thereby meeting the common shearline of the pins. The purpose of this lock is to complicate manipulation by picking. However, the HPC High Security Tubular Pick (No. TLP-UL) will defeat these locks.

**Primary Cuts:** Those cuts most commonly found equally spaced around the circumference of a tubular key. These cuts normally do not penetrate the wall of the key completely. The depth of these cuts is determined by the length of the corresponding pin within the lock. Under the normal conditions these are the only type of cuts which are contained on either the small or standard tubular keys. Explanation of a cut which might penetrate the wall of the key is covered under “Secondary Cuts”.

**Secondary Cuts:** These cuts are often referred to as “cuts-within-cuts”, most commonly found on the “oversize” keys. The secondary cuts will be found to penetrate completely through the wall of the key. Typical location and purpose of these cuts is explained under “Oversize Tubular Keys” above.

**Dead Pin Cuts:** These are cuts occasionally found between two “primary cuts” on a standard size tubular key. The lock in which such a key is used has a “dead pin”. This pin is designed to hamper in the event of manipulation by picking, or an unauthorized key tries to enter. The depth of the dead pin cut is normally not critical but must be of sufficient depth to allow the key to enter the keyway to maximum depth.

**Duplication:** This is the act of directly transferring or tracing cuts as they exist on an original key to a blank key, thereby manufacturing an exact copy. This process is used when the original key is known to actuate the lock smoothly and efficiently. If the original key is in error, or there is a question as to its accuracy, it should be decoded and a precision key cut by code using the code cutting capability of the 747XU.

**Decoding:** The act of determining the longitudinal depth of a cut defined as that distance from the end of the key blank to the bottom of the cut. Normally each depth would be assigned a code of 1 through 8. A standard depth increment for most tubular lock manufacturers is .016 of an inch. Therefore a code depth of 1 would have a depth of .016”. A code depth of 2 would be .032”, and so on to a depth of code 8 which would be .128” deep. NOTE: There are some locks that use an increment other than .016-inch (such as Dyna Lok that uses .025-inch). Since the 747XU uses a standard of .016” depth increments, keys for the locks mentioned are most effectively duplicated rather than cut-to-code.

**Cutting to Code:** This is the act of cutting a key without the use of an original key. This method of cutting a tubular key can become necessary when: (a) there is no original key or (b) there is a possibility that the original key is inaccurate. If this is the case, the original lock should be picked and the pick decoded (using HPC tools). Then cut a new key by code as explained on pages 29-55 of this manual.

**Right and Left Cut Keys:** These terms refer to a rotation of cuts which are occasionally required on Tubular Keys (usually found on standard size keys only). Some locks are manufactured with the pin tumbler locations rotated 1/2 space right or left of normal position. When referring to a right cut key, the cuts are found to be rotated 1/2 space counterclockwise. Left cut keys have a rotation 1/2 space clockwise. See page 43.



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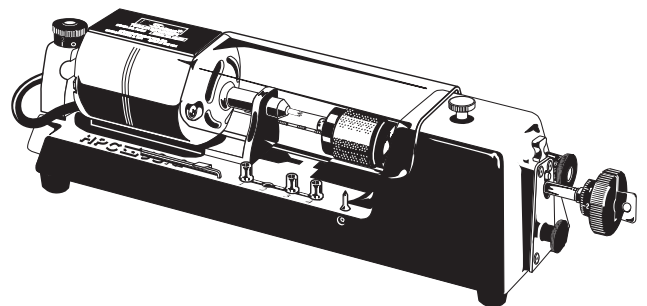
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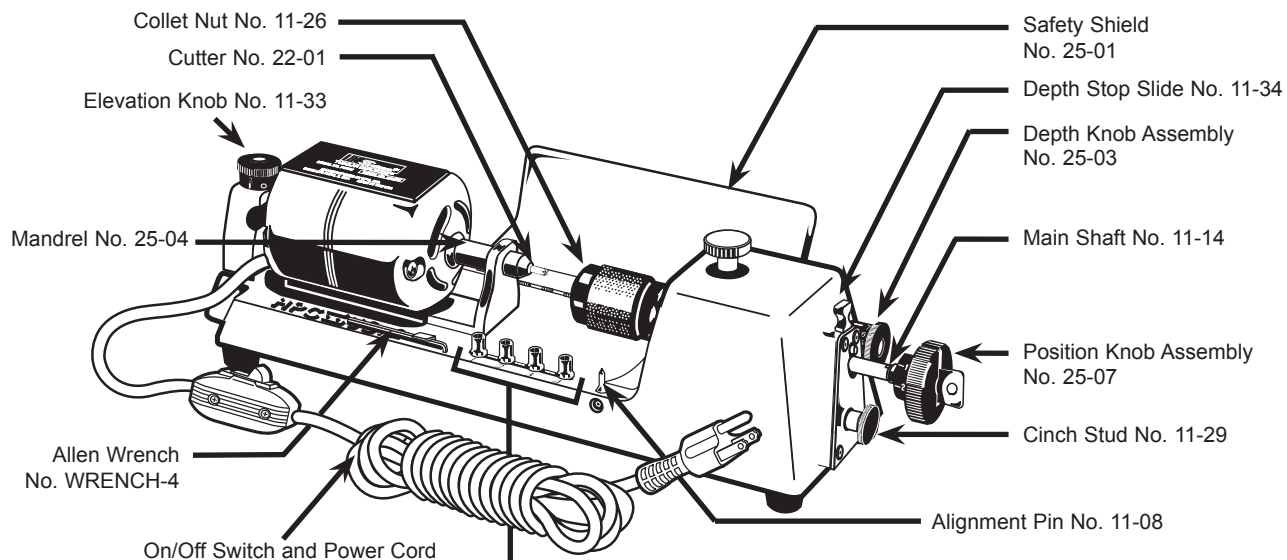
**Expect Quality...  
Demand HPC.**



# 1.0

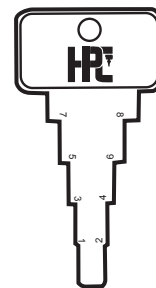
## PARTS DESIGNATION





#### Shaft Extensions

- No. 1 Small No. 11-40 (for .300 ID/ HPC Blank 137SB)
- No. 2 Standard No. 11-38M (for .312 ID/ HPC Blank 137 or 137B)
- No. 3 UL (cut within cut) No. 11-39 (for .330 ID)
- No. 4 Fort Thick Wall No. 11-41 (for .285 ID)



Tubular Key Decoder  
No. TKPD-1

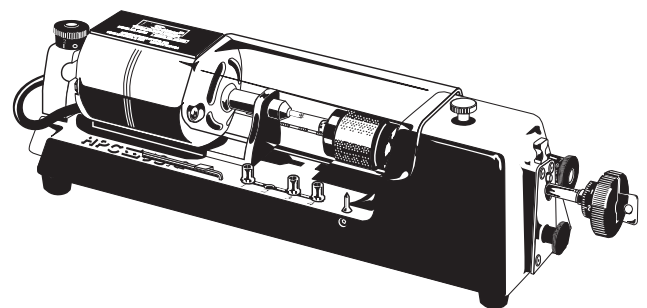
**MOTOR:** 120VAC/60 cycle (1.2 amp 1/15 hp)  
240VAC/50 cycle (.8 amp 1/13 hp)

**WEIGHT:** 7 lbs./3.2 kg.

**MACHINE SIZE:** 16" W x 4" D x 4 1/2" H  
40cm W x 10cm D x 11.5cm H

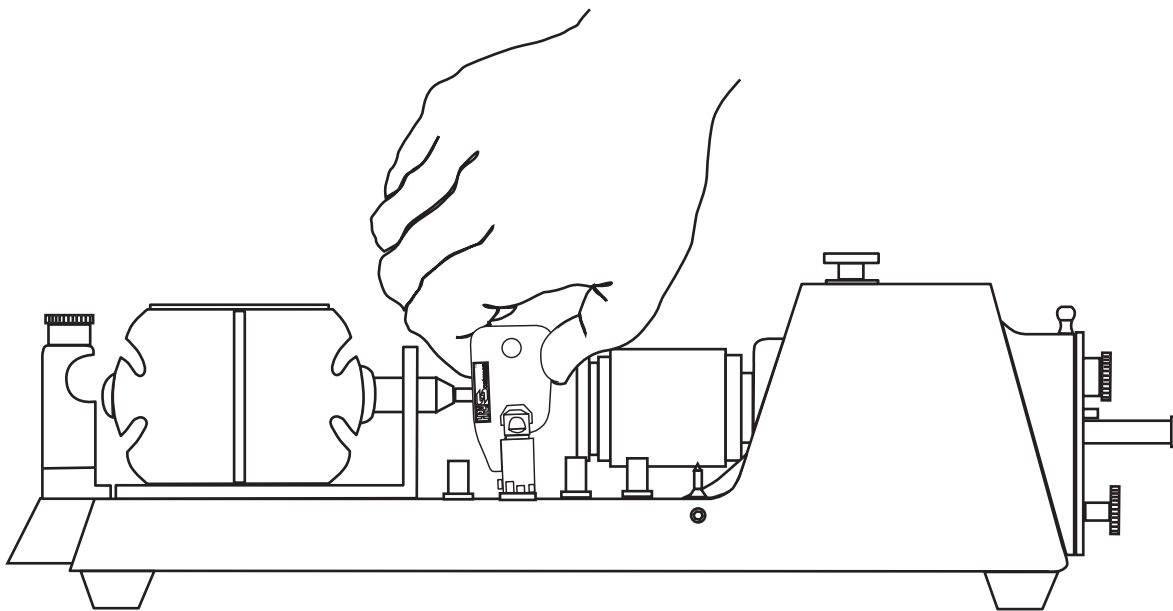
# 2.0

## DUPLICATION



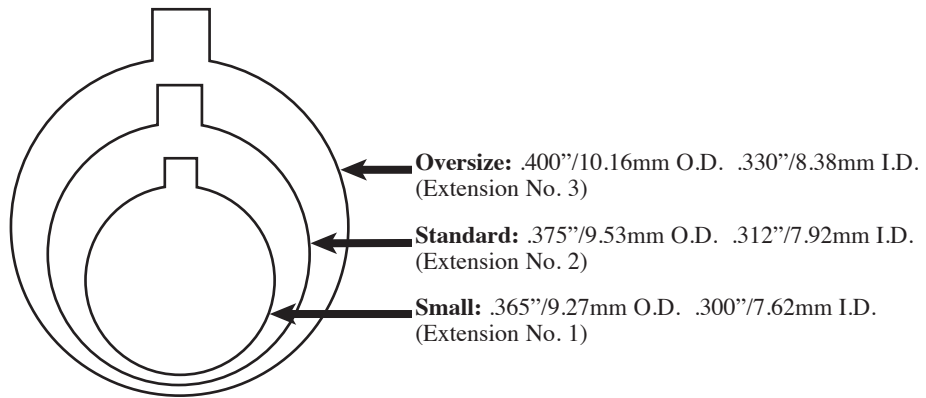
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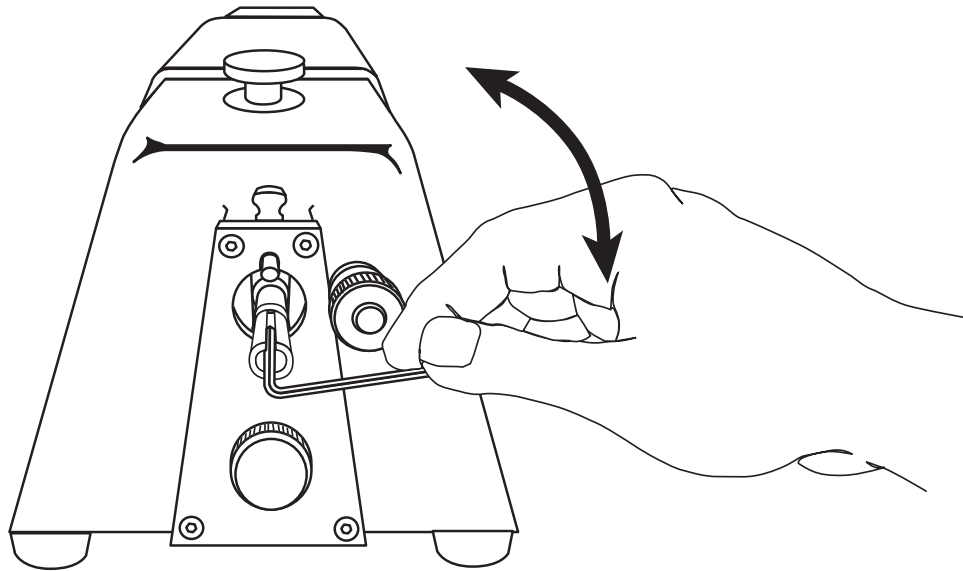


Select proper extension to use. (Machine is assembled with standard No. 2).

**NOTE:** Place key over extensions; the proper size will be the largest extension on which the key will fit.



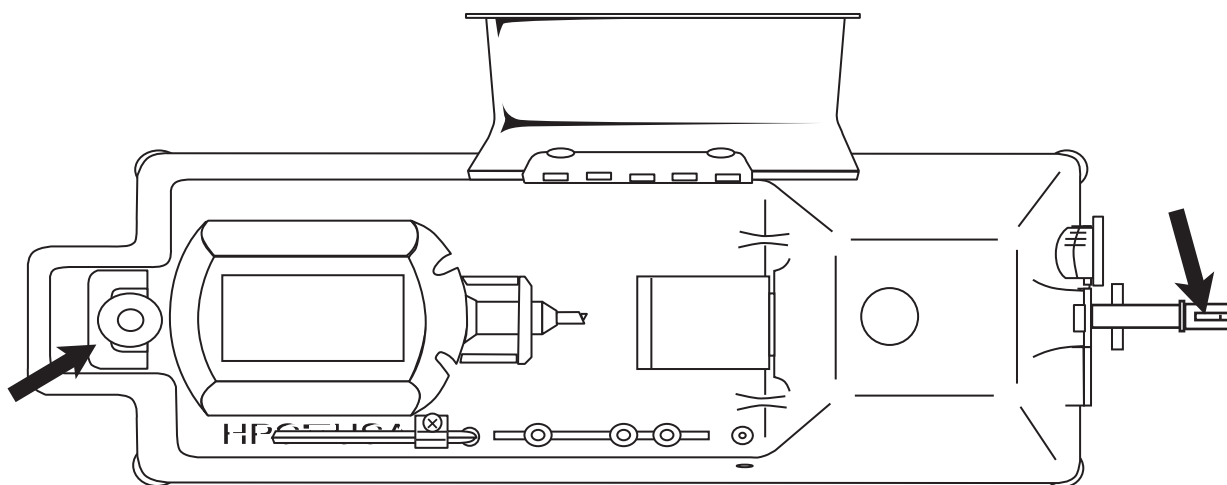
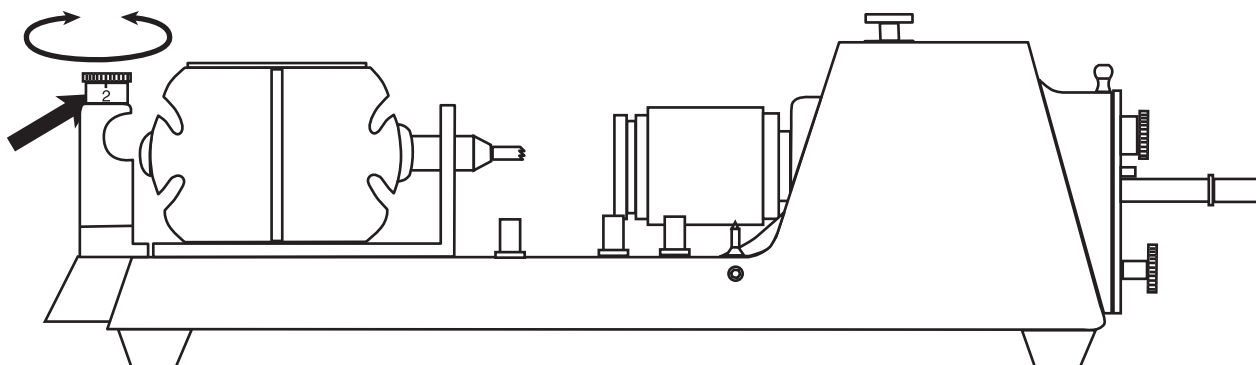
**Note:** the most popular key blank sizes.



To remove and change extensions, use wrench provided.

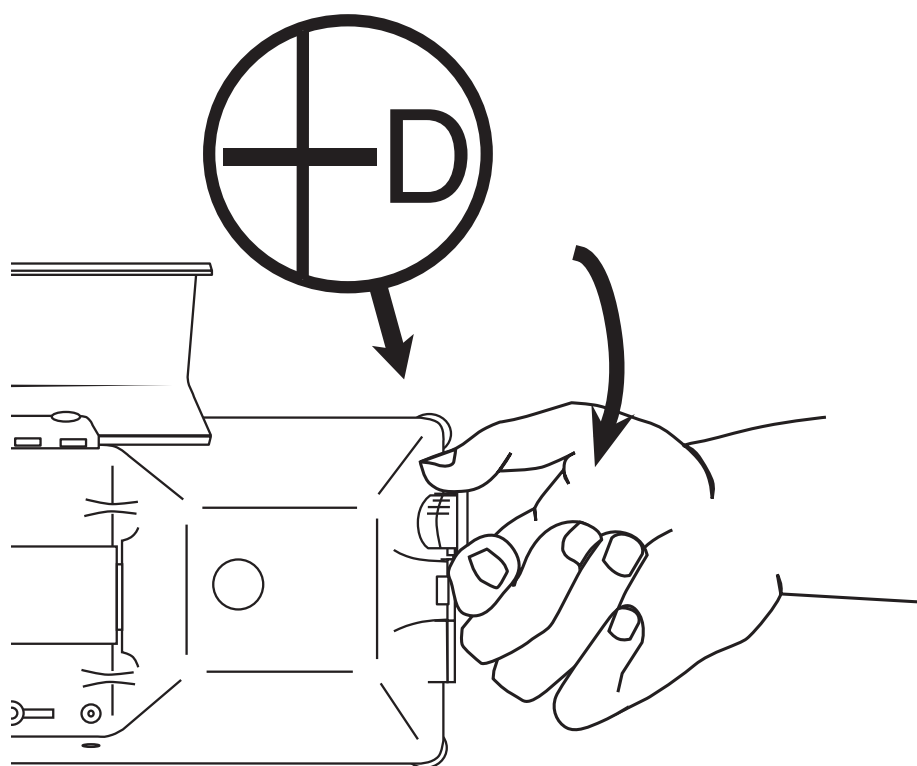
**Hint:** use screw to pull extension into place. Use proper size key blank to *rock* extension when removing. *Never* use vise grips, hammer or pliers to remove or install the extensions, as this may cause damage.



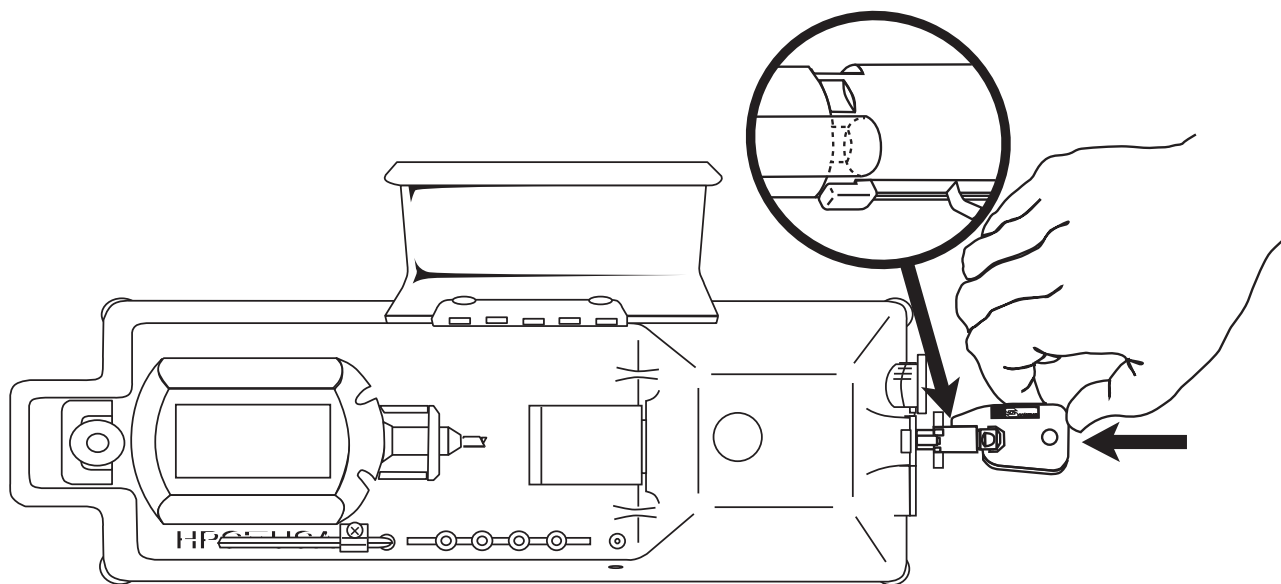


Turn elevation knob to match number of extension used.

Extension No.	Elevation Knob No.
1- Small Bore	1
2- Standard	2
3- UL- Cut Within Cut	3A Primary, 3B Secondary
4- Fort Thick Wall	2

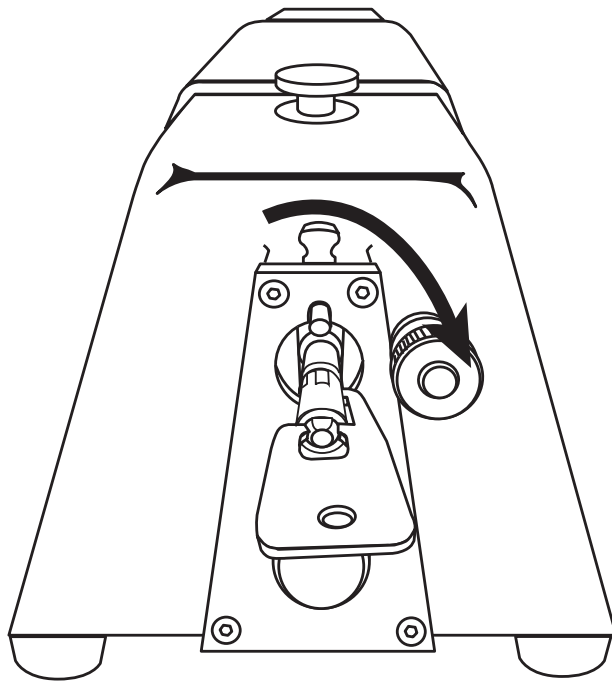


Set depth knob to “D” for duplicating.

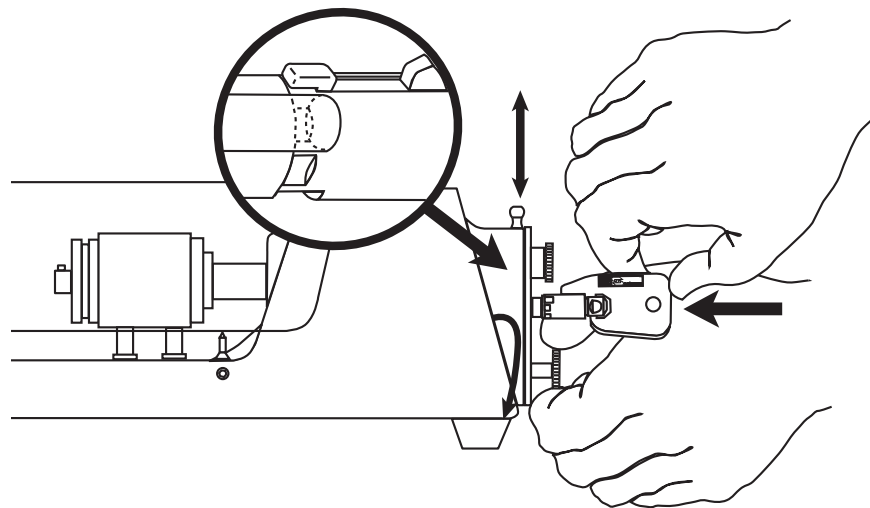
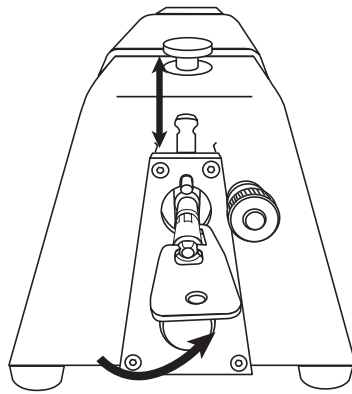


Verify that the original key with cuts enters fully into depth stop.

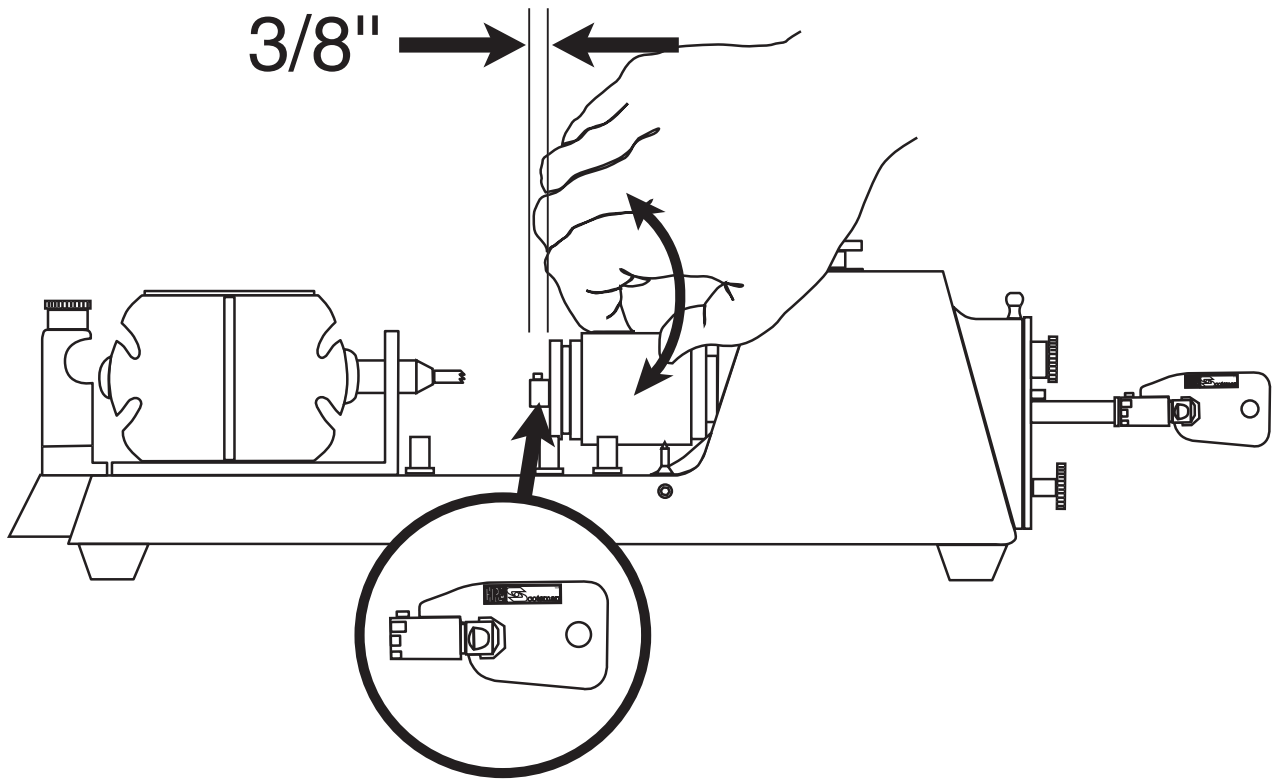
**NOTE:** an HPC tubular pick, with the feelers in “picked” position, can be used to “duplicate” a key.



If the cuts on the original key do not fit smoothly under the stop pin, the stop pin is too low. If the key will insert past the stop pin, the stop pin is too high. To adjust the stop pin, push in and rotate key so a cut lines up with the stop pin, then...

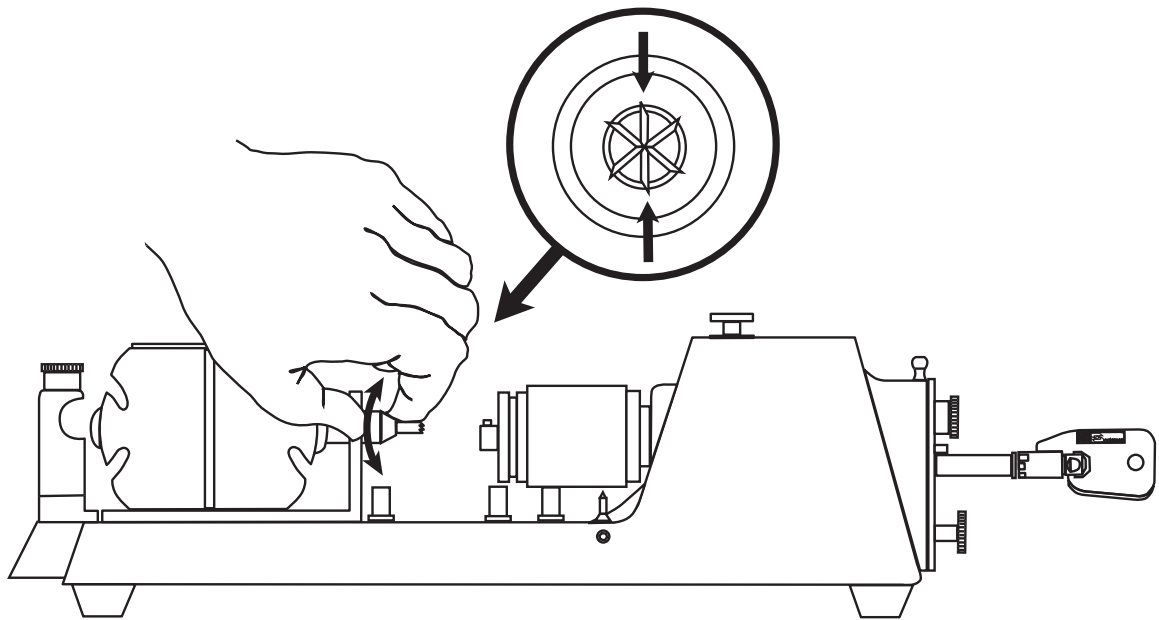


Loosen the cinch stud and position the stop pin to smoothly enter the cut on key, then tighten cinch stud.

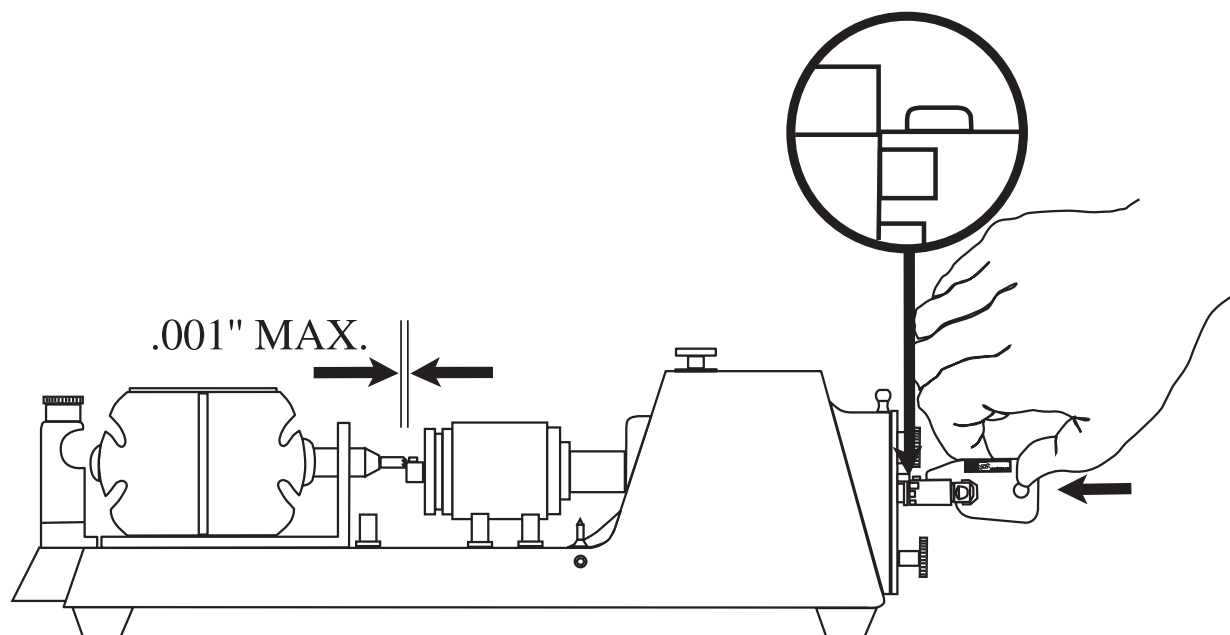


Insert blank into collet and leave sticking out approximately 3/8" (.375"/9.6mm). Then lightly but, firmly *hand tighten* collet nut.

**NOTE:** Do not overtighten as key needs to move during indexing to allow for proper seating of key.



Turn cutter to “flute down” position, so one flute on the cutter is positioned straight up and down.

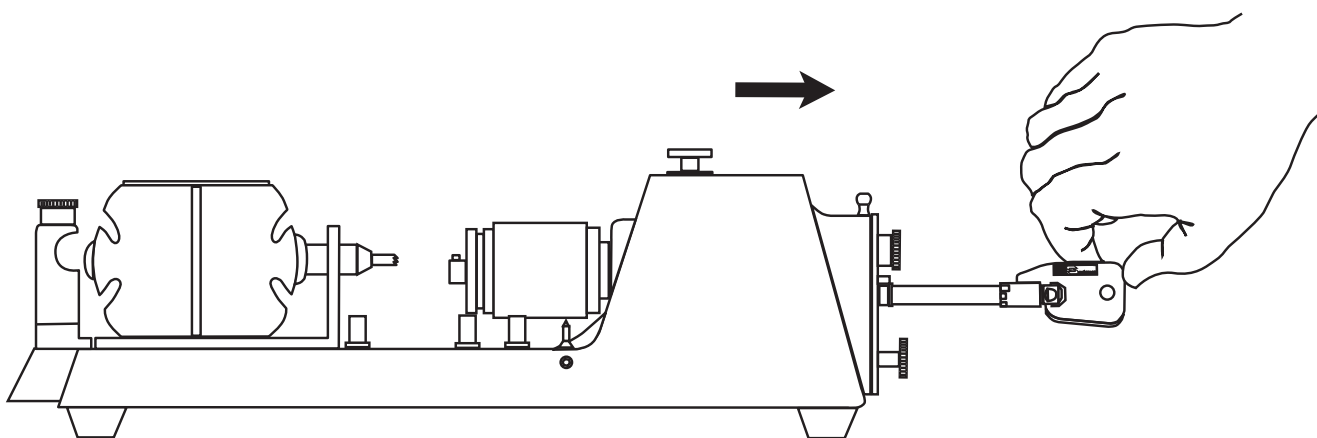


With machine switched “off”, push shaft with key to be duplicated *firmly and fully* into stop to properly “index” the blank.

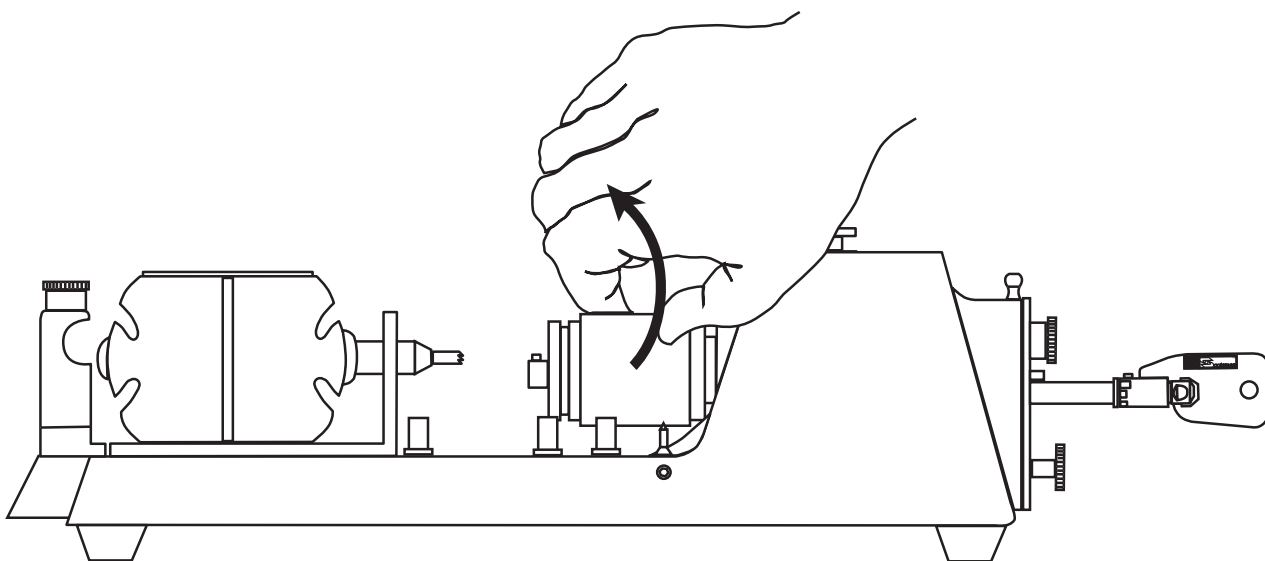
**Note:** The key should recess slightly into the collet when properly indexed.

**Note:** Cutter should just barely scrape key when turned by hand. You may wish to index key in (3) or more positions. If key face is not flat, accuracy will be compromised.

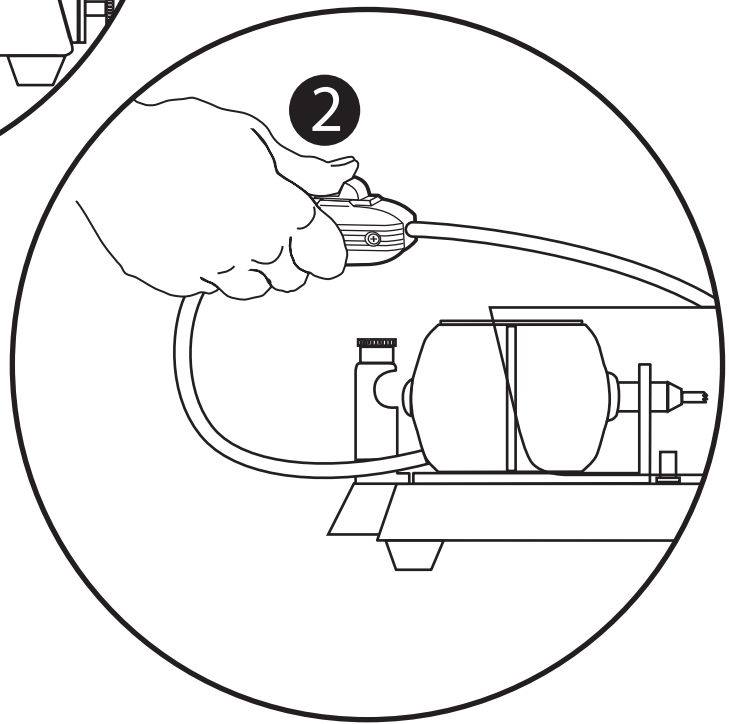
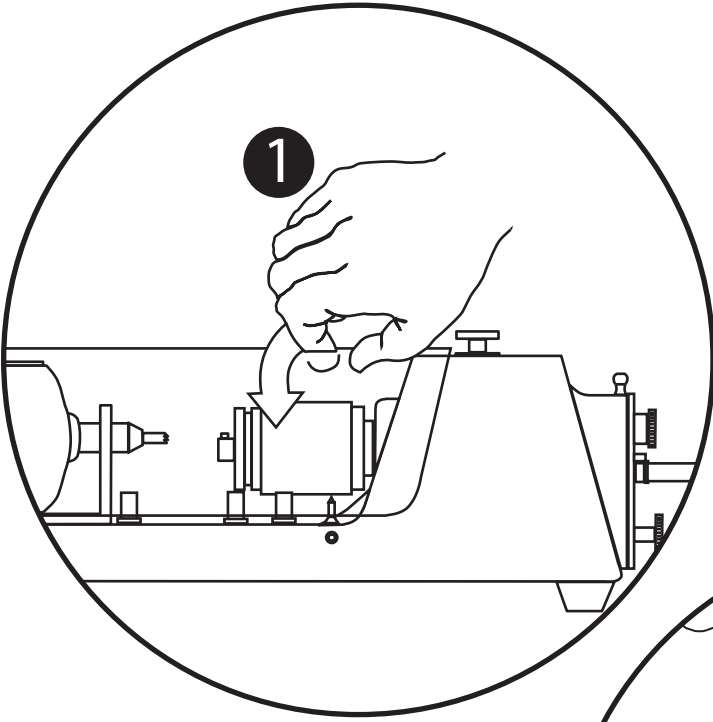




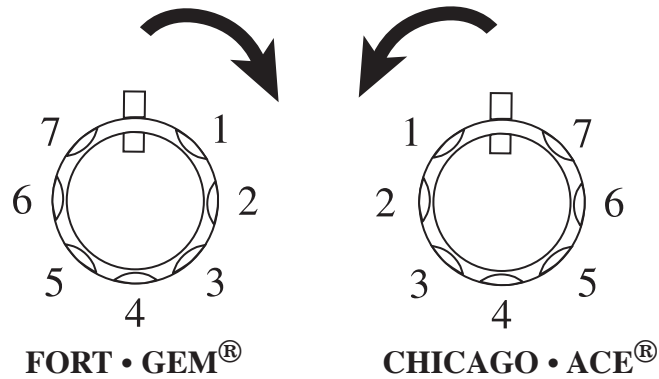
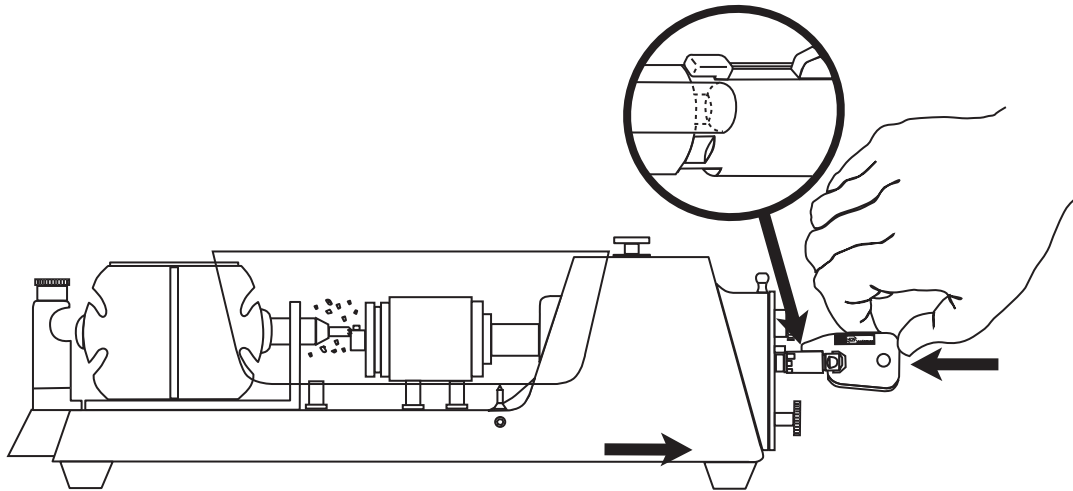
Slowly release shaft and allow key to come all the way back to rest position.



Re-tighten collet nut.



1. Close cover.
2. Turn on machine.

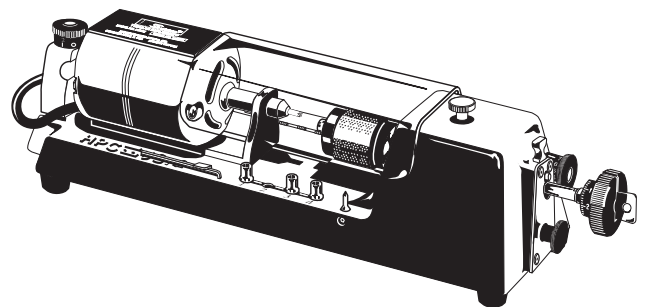


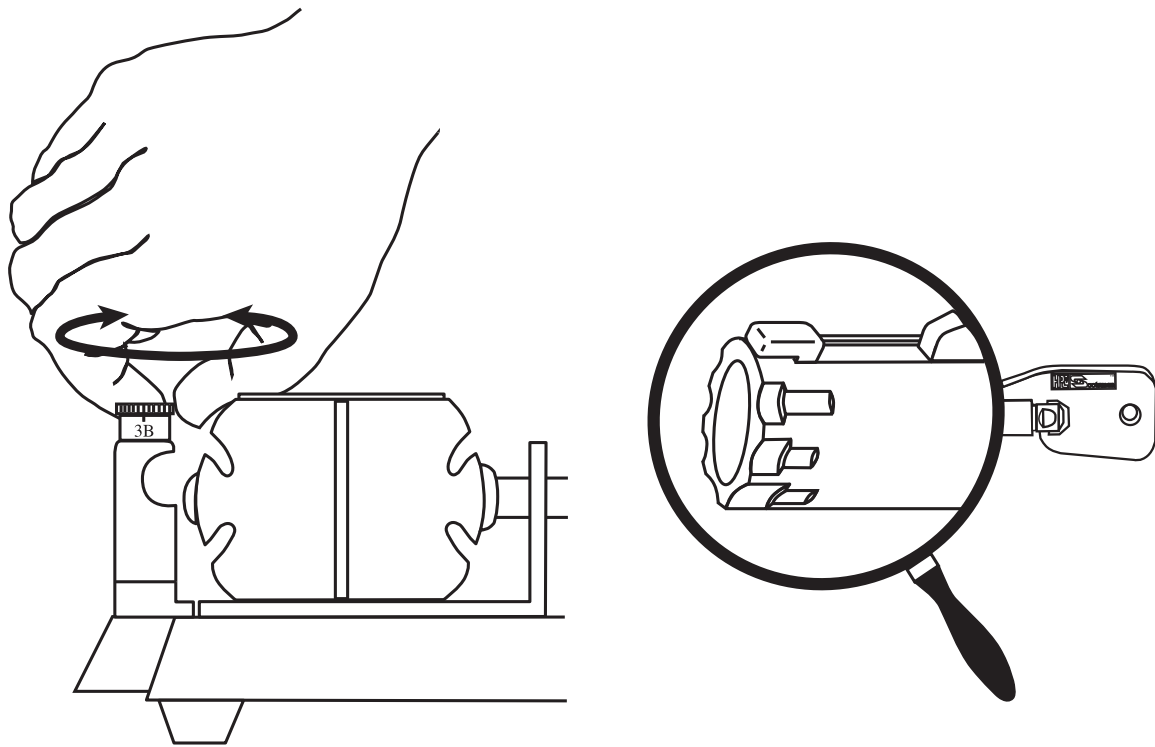
NOTE: Most popular manufacturers spacing rotation.

Using a *slow, steady* movement, push the original key to engage cutter and extend all the way to fully engage the stop pin on each cut. Slowly release the shaft, and rotate to next cut until all cuts are made. Switch machine off.

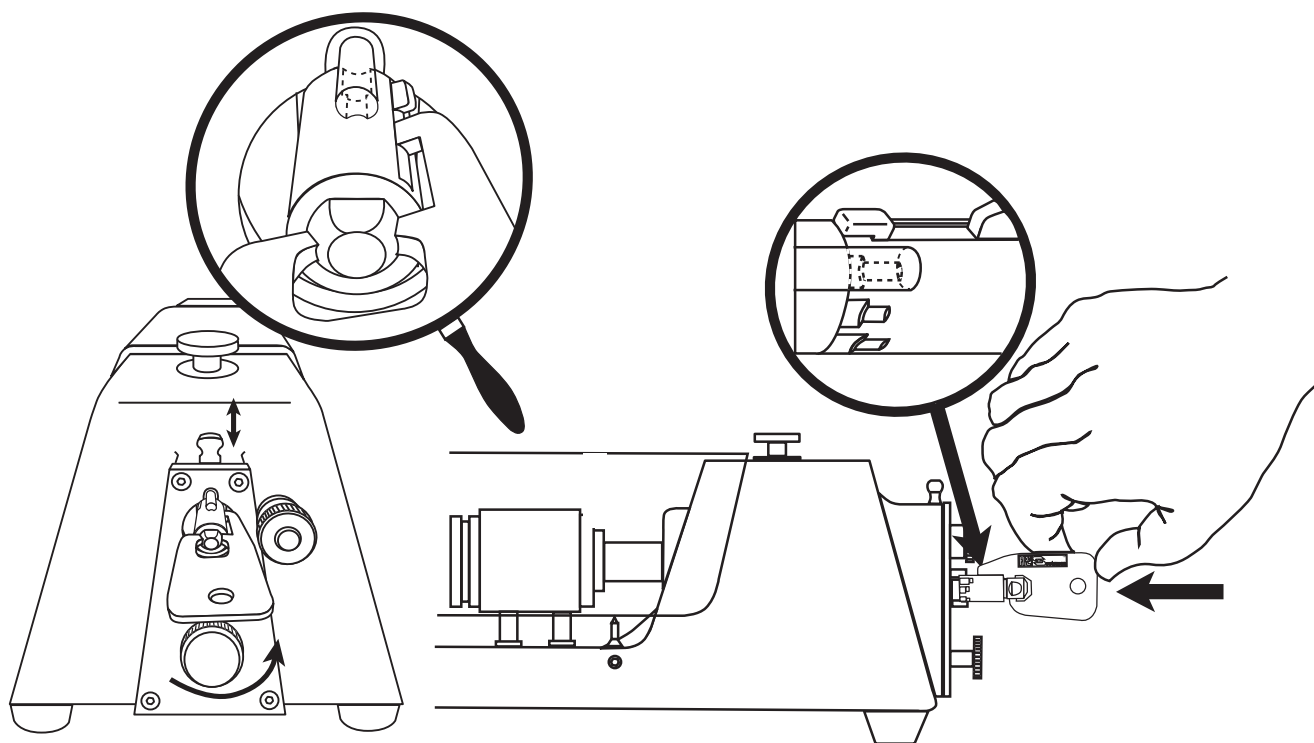
# 2.5

## DUPLICATING SECONDARY CUTS



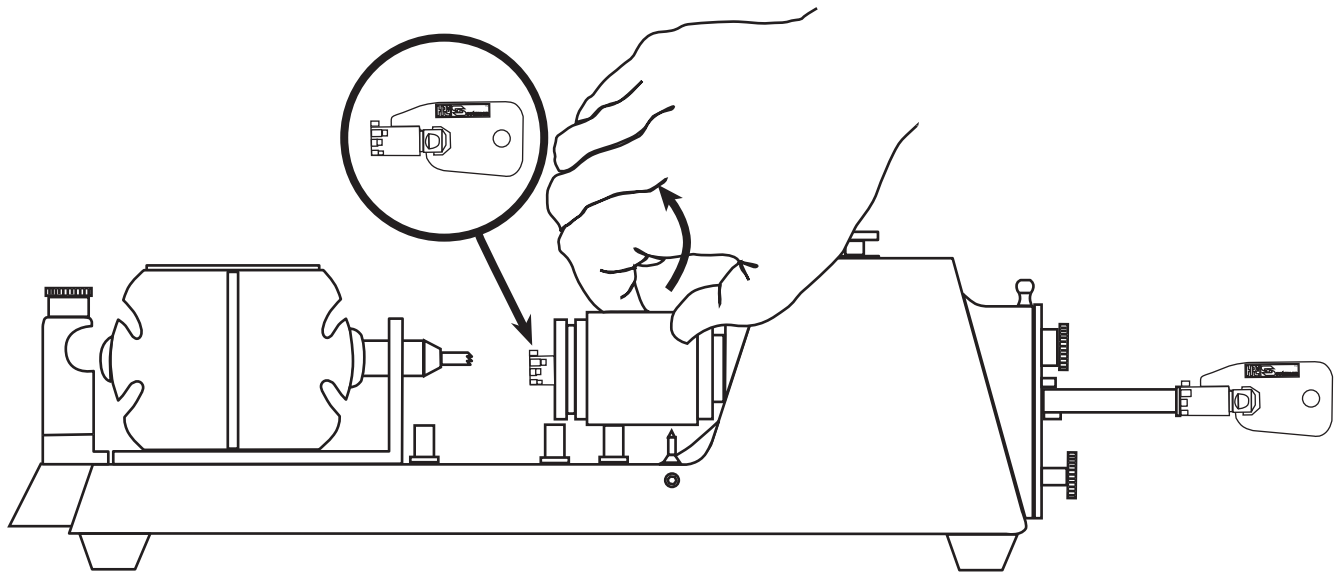


If key has secondary cuts, insure the machine is switched off and turn Elevation Knob to setting “**3B**”.



Loosen cinch stud and position stop pin to smoothly, enter secondary cut on key then tighten cinch stud.

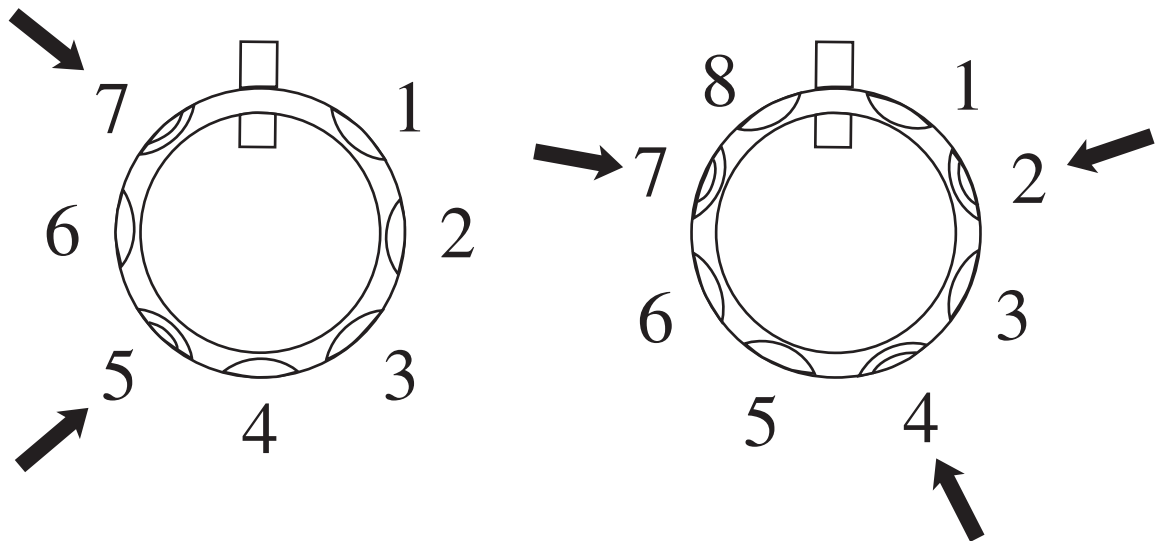
**NOTE:** No need to reset on Fort thick walled keys.



With the machine switched off, loosen collet and re-index key (as detailed on pages 16-20).

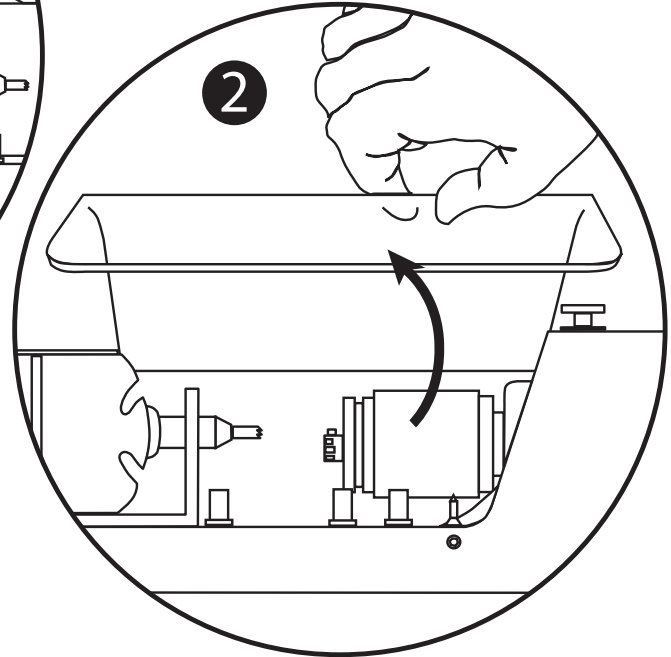
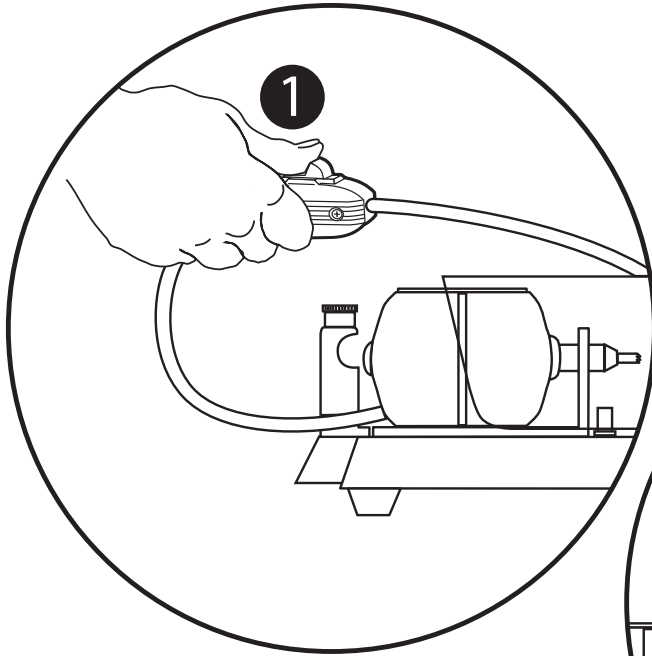


## Possible Patterns of Secondary Cuts

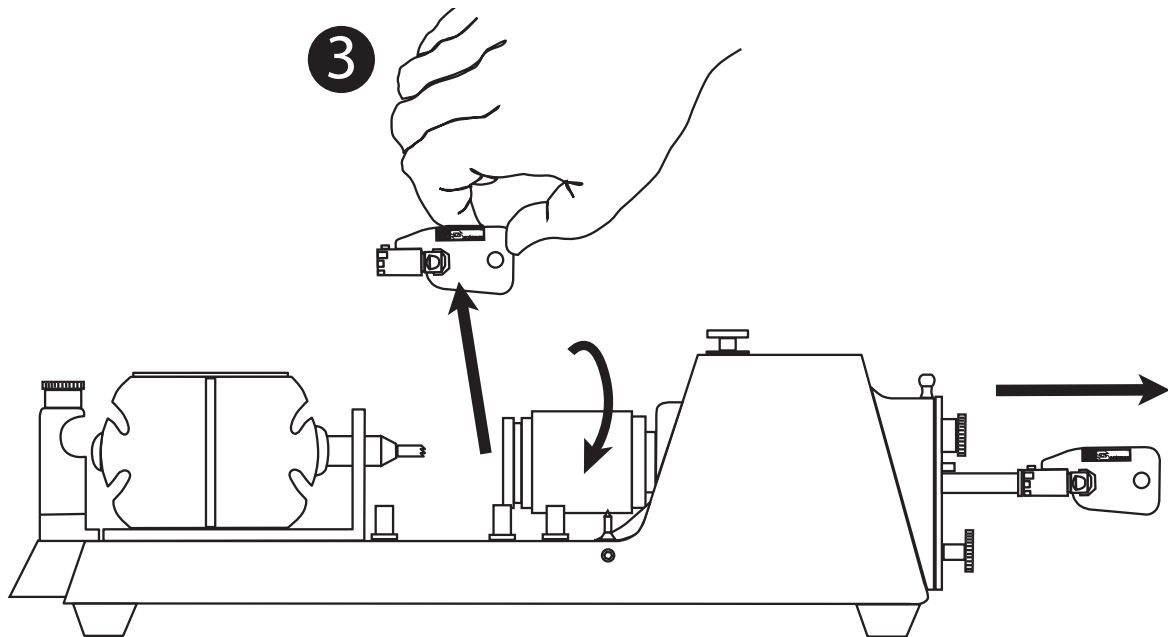


**Note:** secondary cut positions on key you are duplicating.

Using a slow steady movement, push the original key to engage cutter and extend all the way to fully engage the stop pin on each secondary cut. Slowly release the shaft, and rotate to next secondary cut, until all cuts are made.



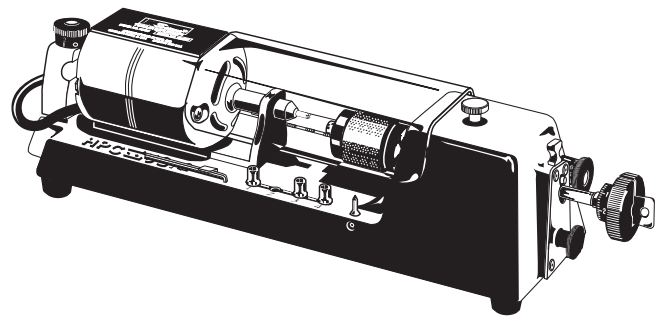
When done duplicating all cuts, turn off machine and lift cover.



Remove keys, and deburr the duplicate key, as needed.

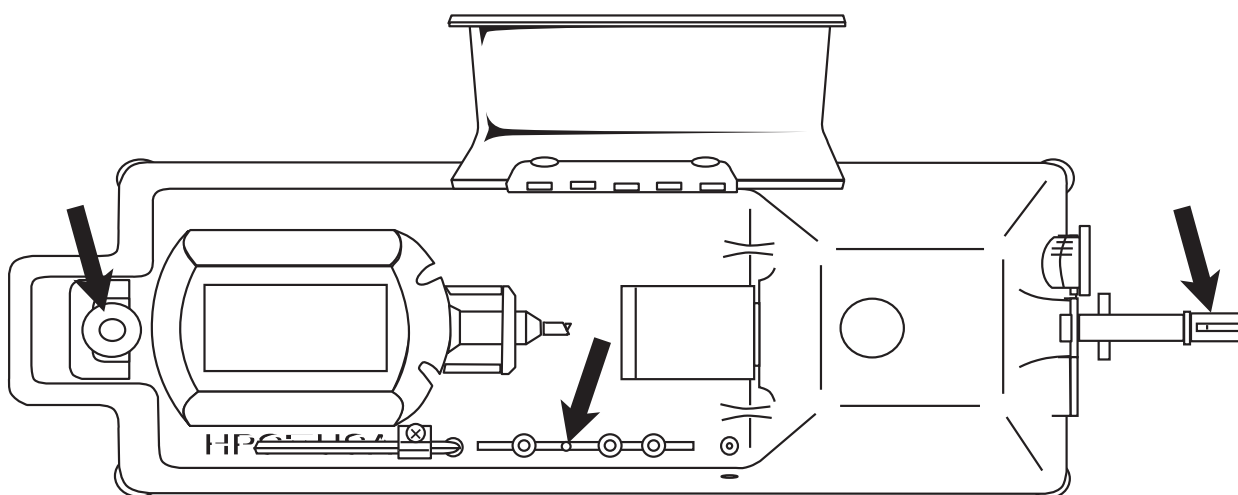
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## CUTTING BY CODE



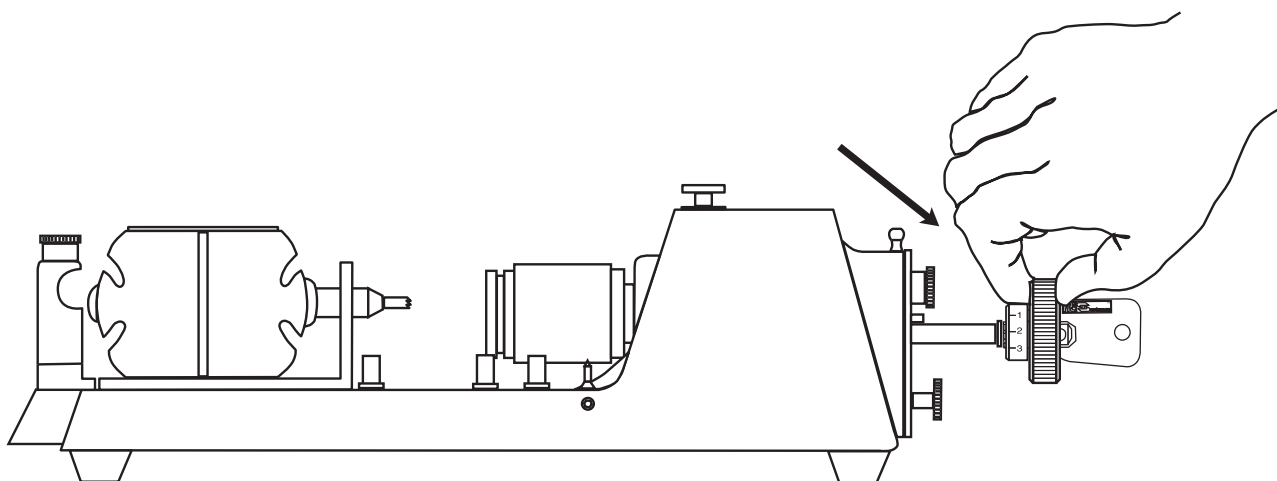
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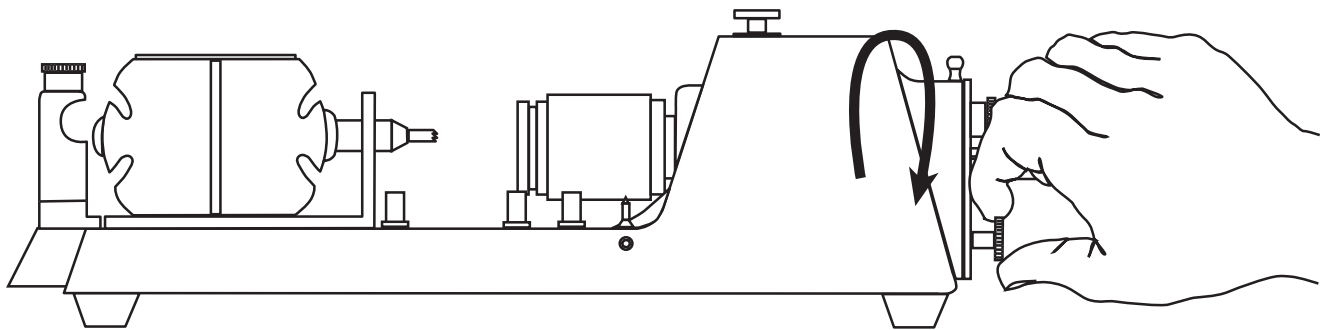


Install the No. 2 extension. Set the Elevation Knob to the proper number of the key you will cut.

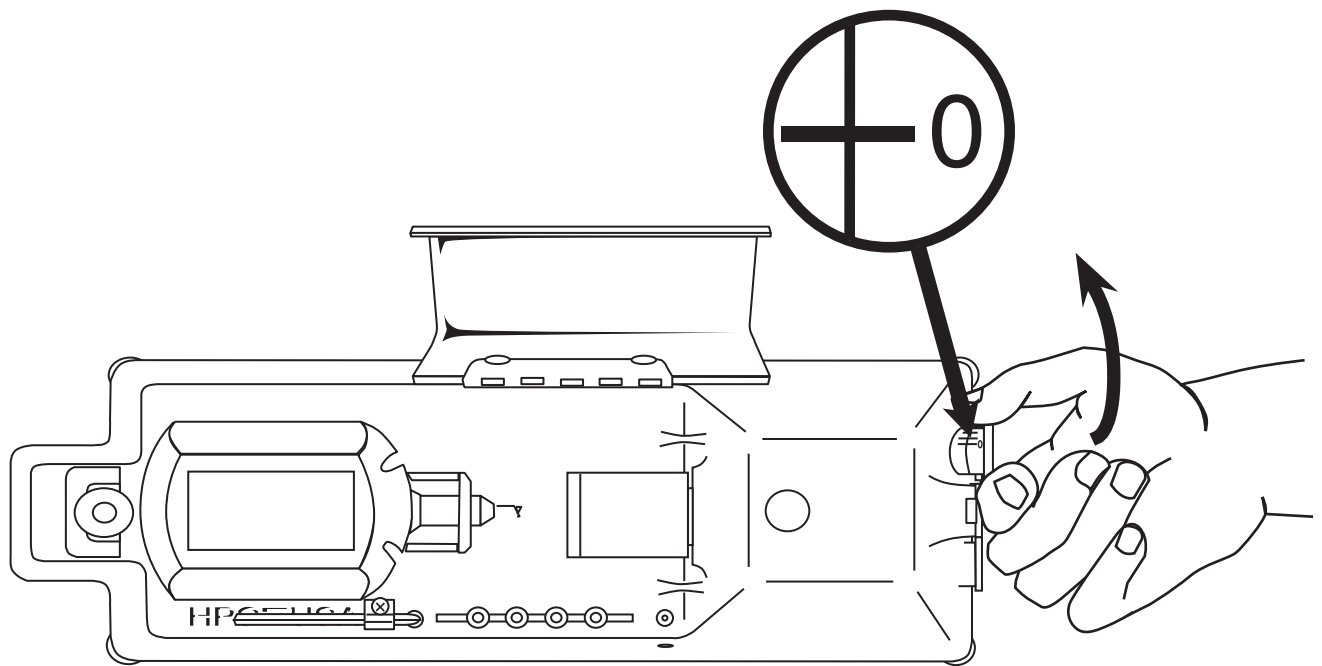
Small Bore	1
Standard	2
UL- Cut Within Cut	3A-Primary/3B-Secondary
Fort Thick Wall	2



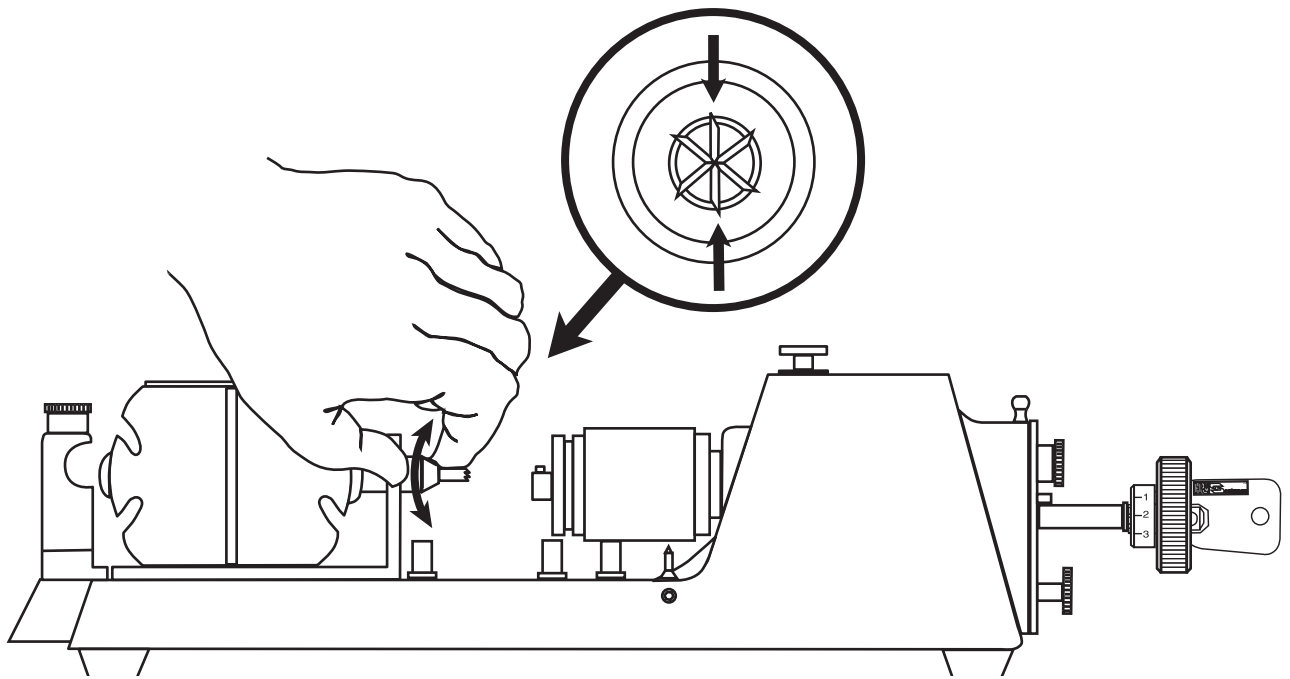
Place Position Knob (No. 25-07) on end of shaft.



Loosen cinch stud so that Position Knob key enters below and clear of depth stop pin.



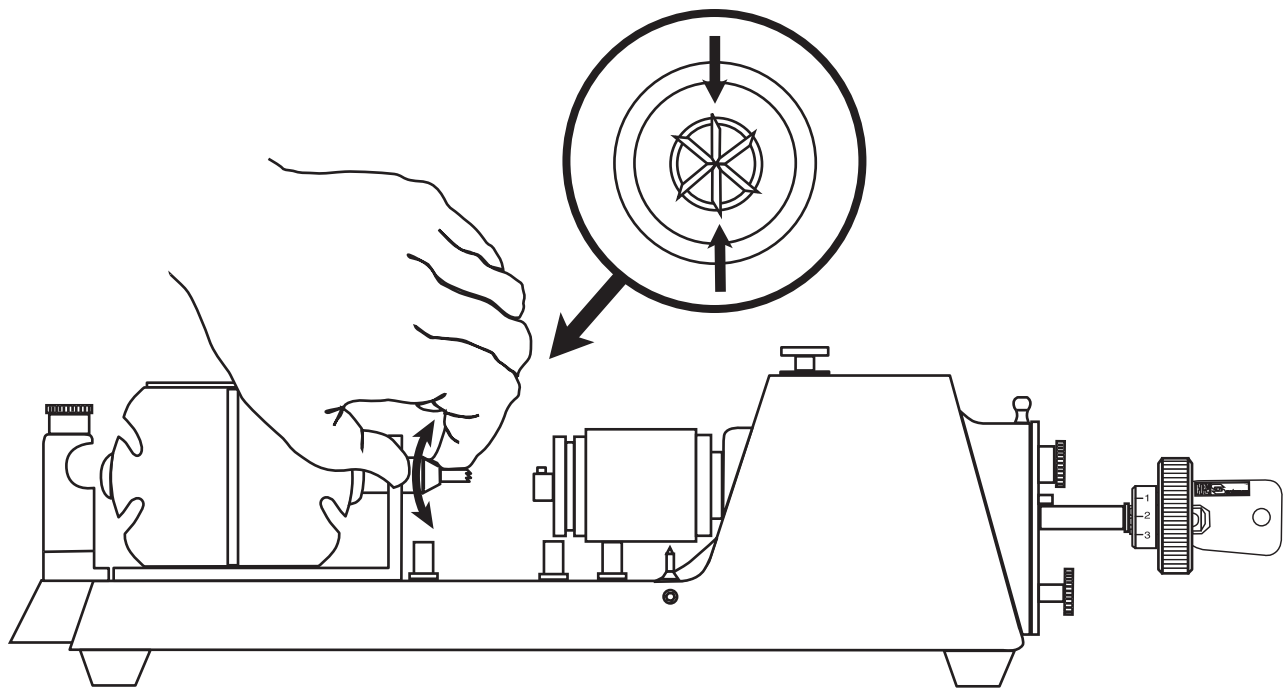
Turn depth knob to “0” position.



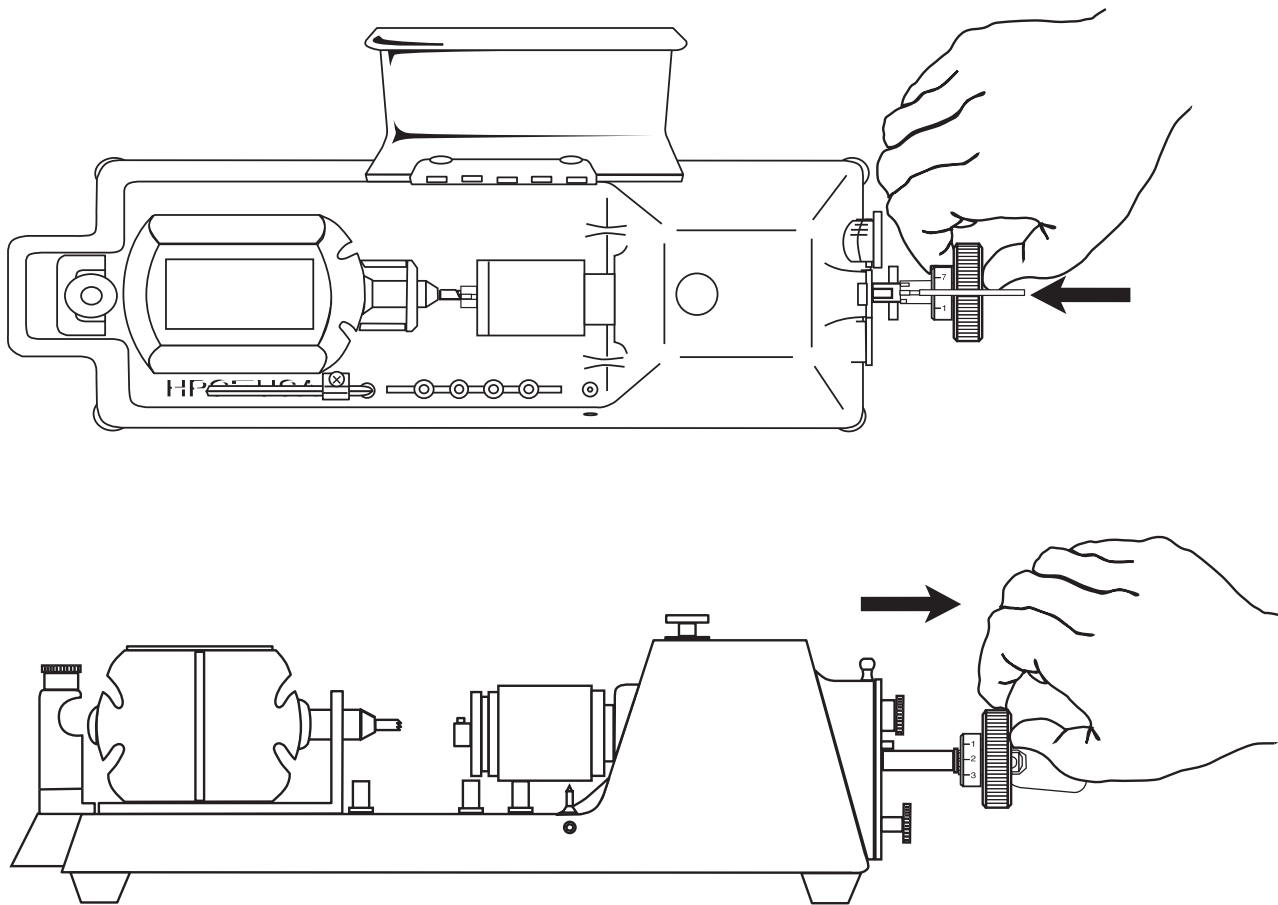
Insert blank to be cut into collet and leave sticking out approximately  $\frac{3}{8}$ " (.375"/9.6mm). Then lightly, but firmly *hand tighten* collet nut.

**NOTE:** Do not overtighten as key needs to move during indexing to allow for proper seating of key.





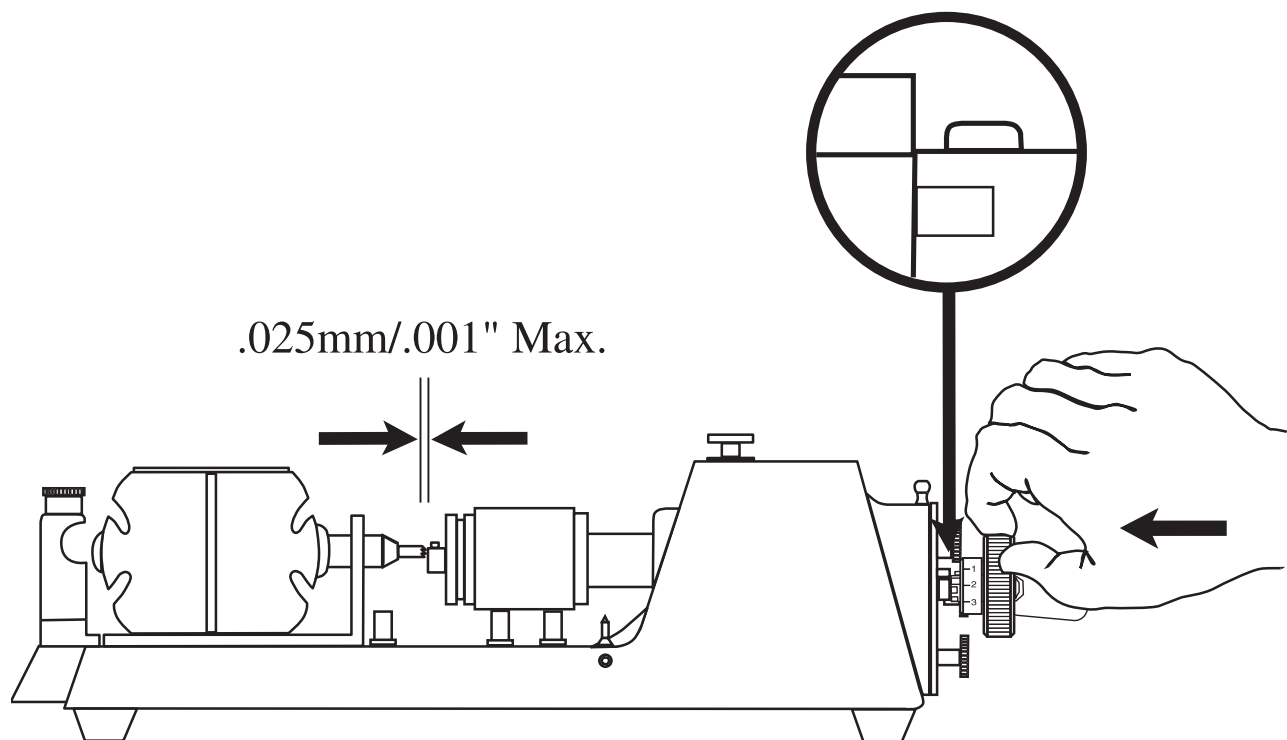
Turn cutter to “flute down” position, (so one flute on the cutter is positioned straight up and down).



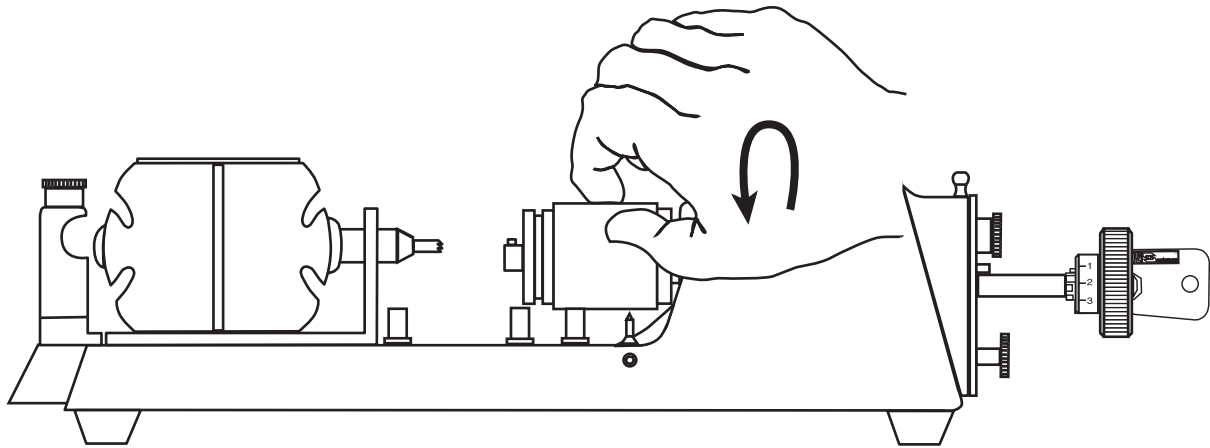
With machine switched “off”, push shaft with position knob *firmly and fully* into stop to properly index the key blank.

**Note:** The key blank should recess slightly into the collet when properly indexed.

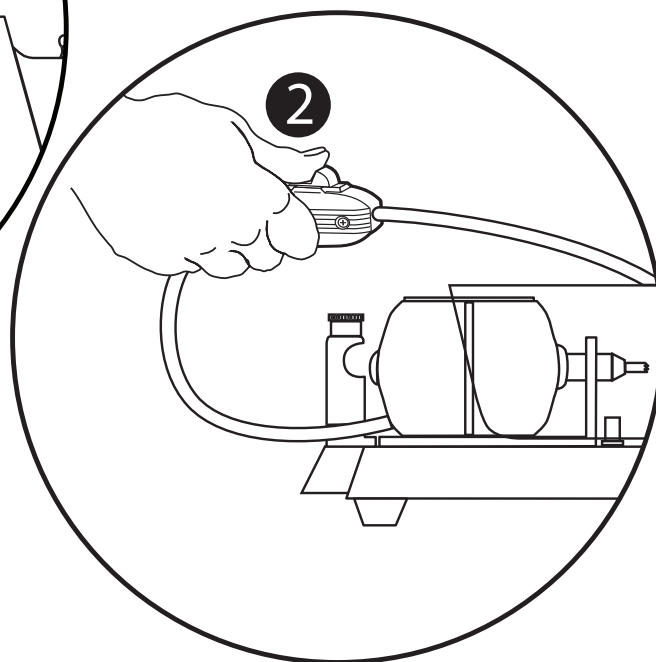
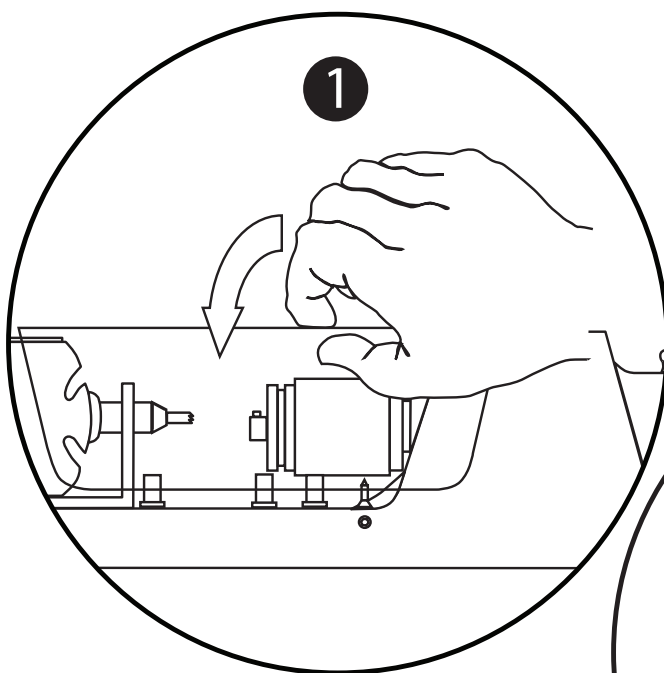
**Note:** Position Knob key should not engage stop pin, but rather use the decoder “0” position as an internal stop to gauge key.



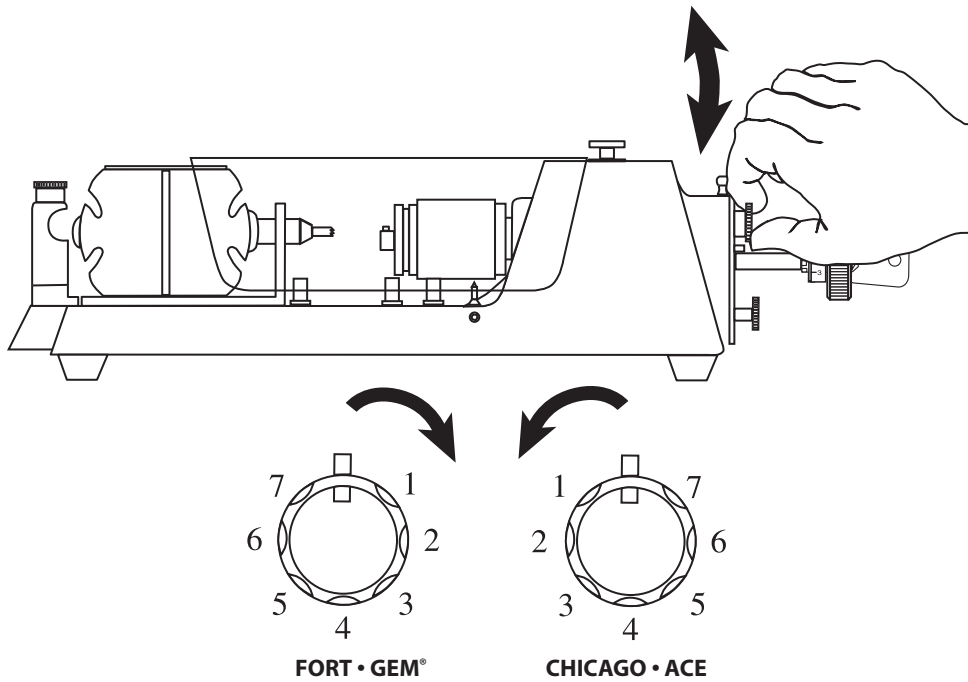
**Note:** Cutter should just barely scrape key when turned by hand. You may wish to index key in 3 or more positions. If key face is not flat, accuracy will be compromised.



Re-tighten collet nut.



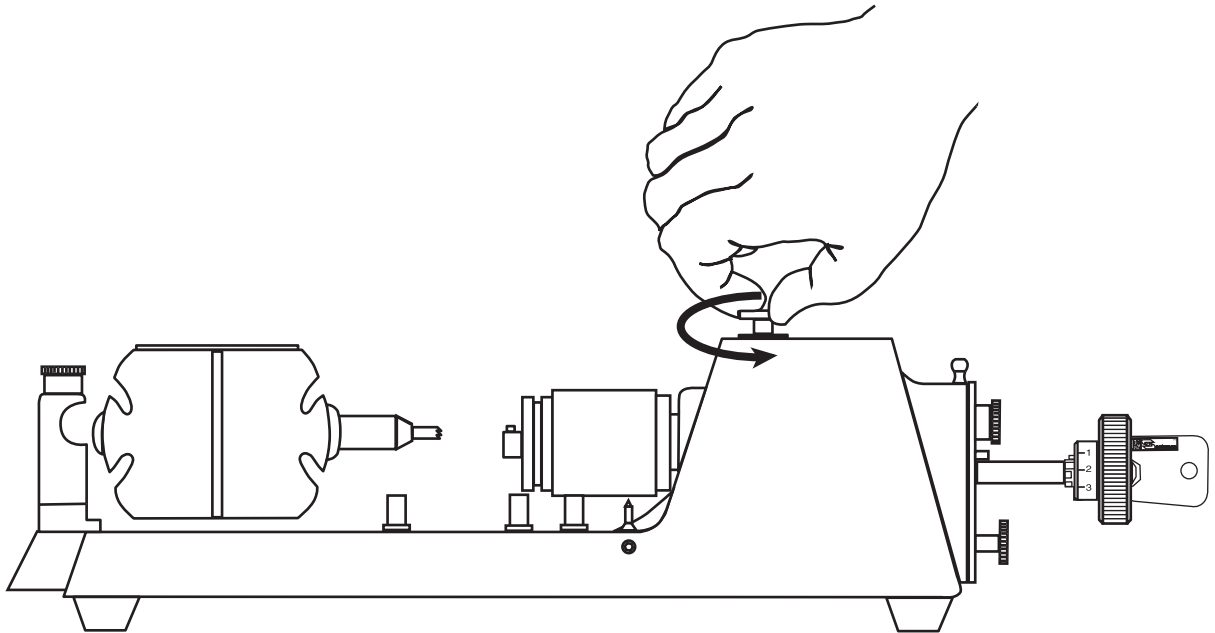
1. Close cover.
2. Turn on machine.



NOTE: Most popular manufacturers spacing rotation.

<b>Tubular Duplicode™ Depth Knob</b>	<b>Chicago Ace Depth</b>	<b>Fort Lock Depth</b>	<b>Depth in inches</b>	<b>Depth in MM</b>
1	1	0	0.016	0.41
2	2	1	0.032	0.81
3	3	2	0.048	1.22
4	4	3	0.064	1.63
5	5	4	0.080	2.03
6	6	5	0.096	2.44
7	7	6	0.112	2.84
8	8	7	0.128	3.25

Turn the depth knob to first depth dimension for the key you are cutting.

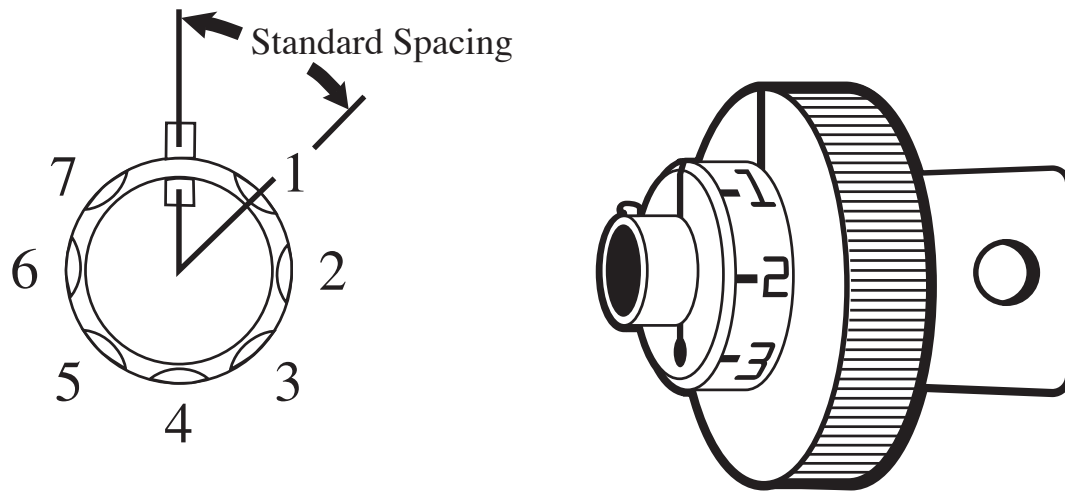


**(only for cutting in non-standard space increments)**

The 747XU is set to handle (16) standard rotation positions. This means that spaces at any  $22.5^\circ$  increment will be controlled by the internal spacing mechanism of the machine to ensure spacing will be accurate.

**NOTE:** If you wish to disengage this function, turn position guide counterclockwise (as shown above) 2 full rotations, and cuts may be made in other than the standard positions.

## Standard Spacing



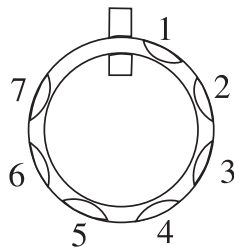
The spaces for standard 7-pin keys are delineated by the numbers 1-7 on the Position Knob.

The internal spacing mechanism ensures the cuts will be made in the correct position. As you push in on the knob you will feel the spacing mechanism engage.

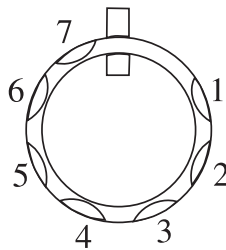


## Offset Spacing

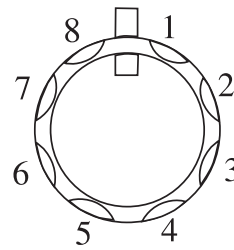
**7-Pin Right Offset**



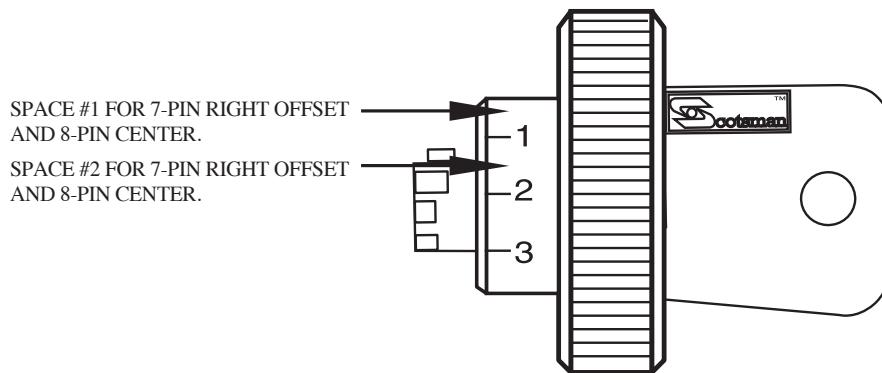
**7-Pin Left Offset**



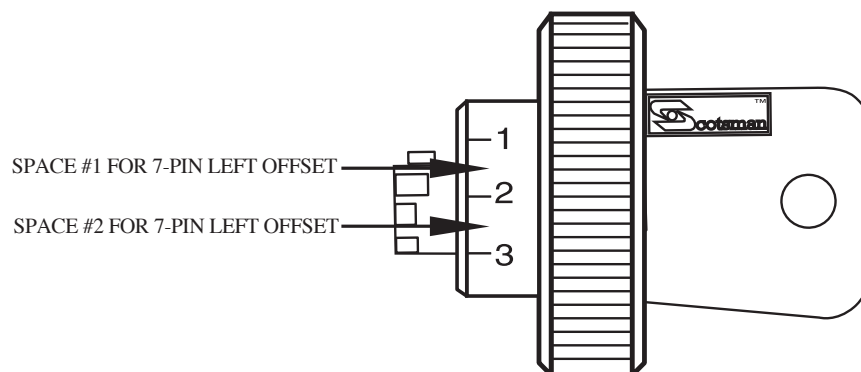
**8-Pin Split Center**



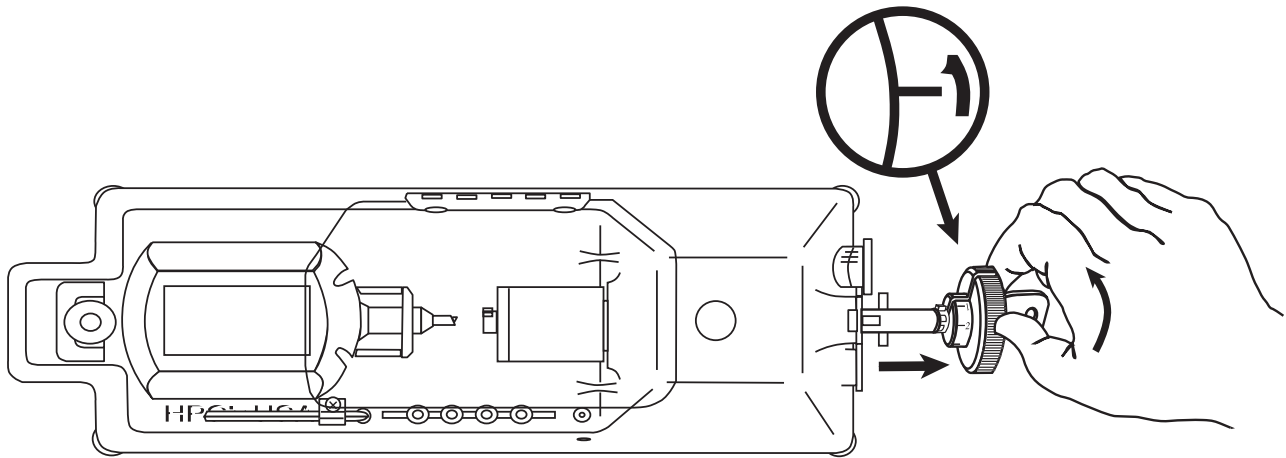
7-Pin Left or Right Offsets and 8-Pin Center Keys require interpolation of the Position Knob. That is, all spaces are half-way between the numbers.



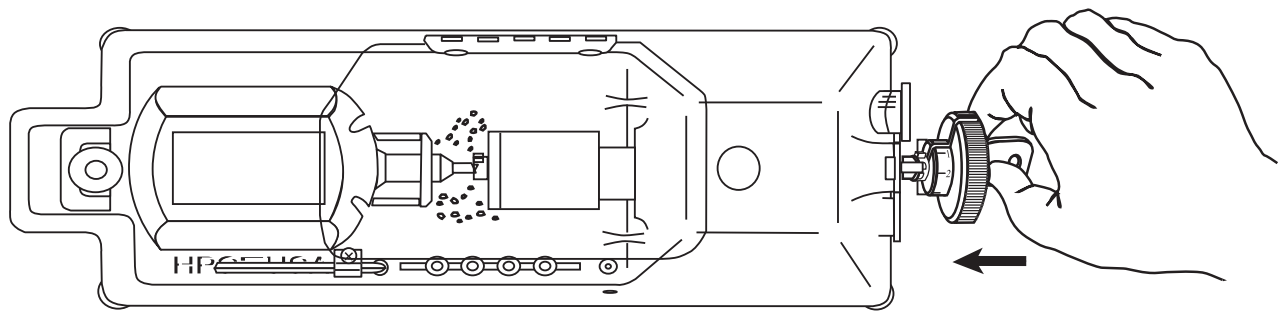
On 7-Pin Right Offset and 8-Pin Center, the first space is half-way *before* the number 1 and the second space is half-way between numbers 1 and 2, continuing for all spaces.



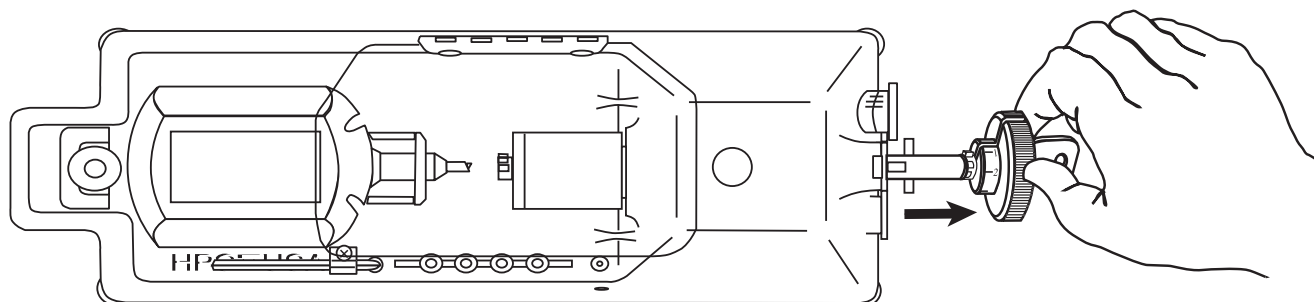
On 7-Pin Left Offset, the first space is half-way *after* the number 1 and the second space is half-way between numbers 2 and 3, continuing for all spaces.



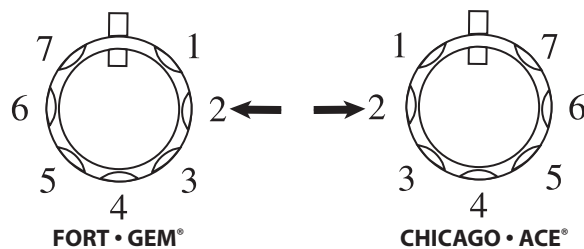
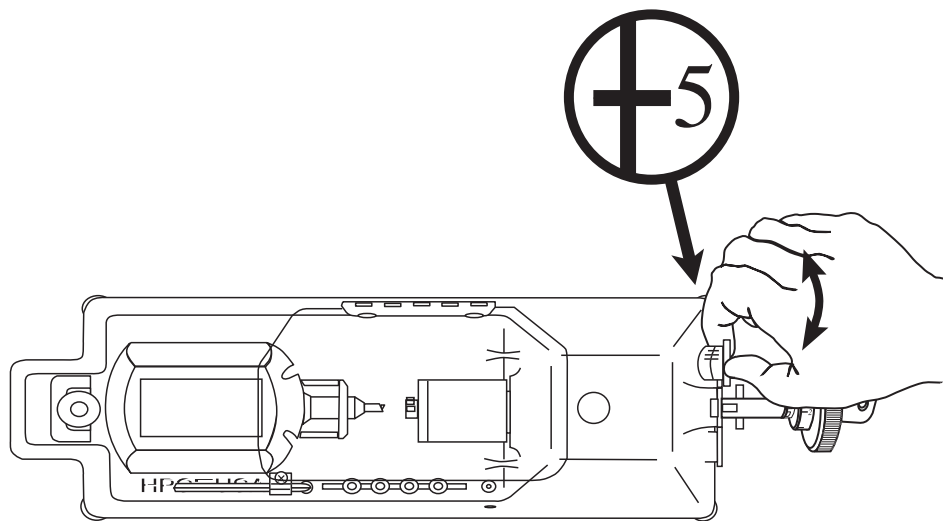
Push in and turn Position Knob to first space position for the key you are cutting.



Using a *slow, steady movement*, engage cutter and push all the way in to fully engage internal decoder stop face.



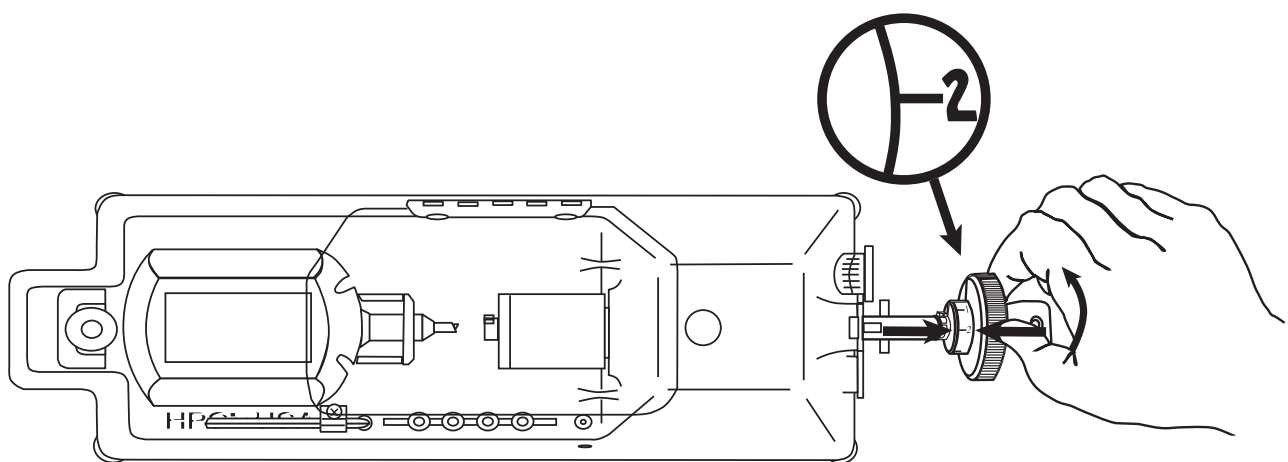
Slowly release shaft after completing each cut.



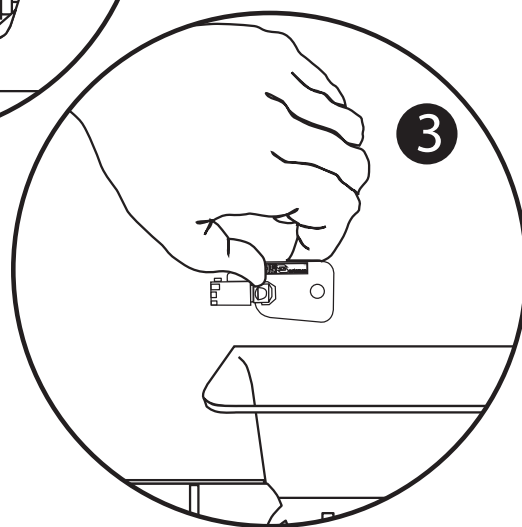
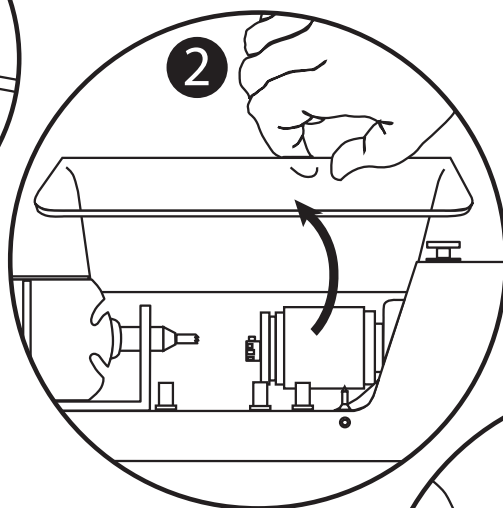
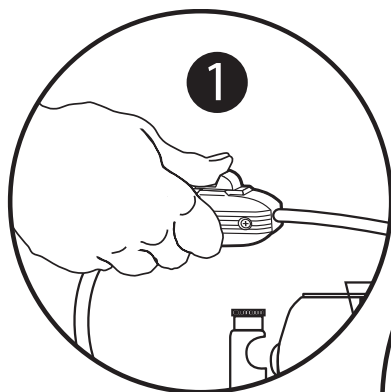
NOTE: Be sure you are using the correct spacing rotation.

<b>Tubular Duplicode™ Depth Knob</b>	<b>Chicago Ace Depth</b>	<b>Fort Lock Depth</b>	<b>Depth in inches</b>	<b>Depth in MM</b>
1	1	0	0.016	0.41
2	2	1	0.032	0.81
3	3	2	0.048	1.22
4	4	3	0.064	1.63
5	5	4	0.080	2.03
6	6	5	0.096	2.44
7	7	6	0.112	2.84
8	8	7	0.128	3.25

Turn depth knob to the depth for the next space.



Push in and rotate to second space position. Continue this procedure until all cuts are complete.



After all cuts have been made, turn machine off and lift cover. Remove key, and deburr as needed.

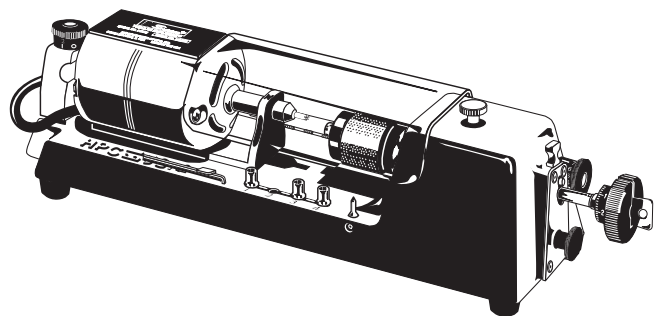
**Expect Quality...  
Demand HPC.**

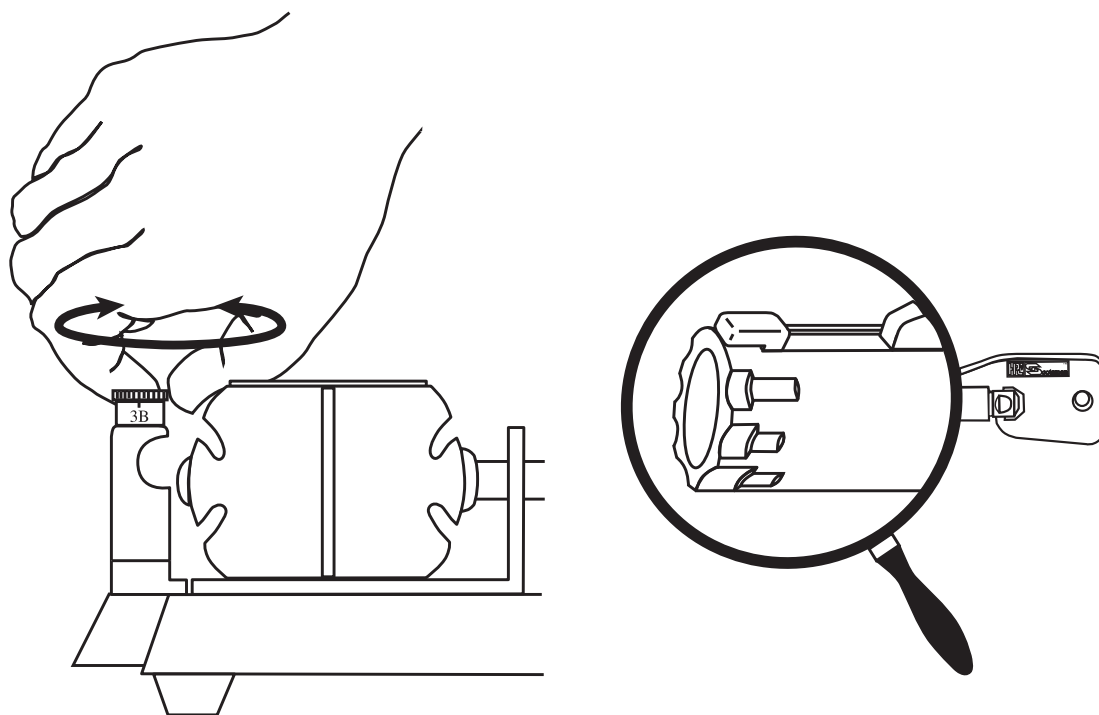




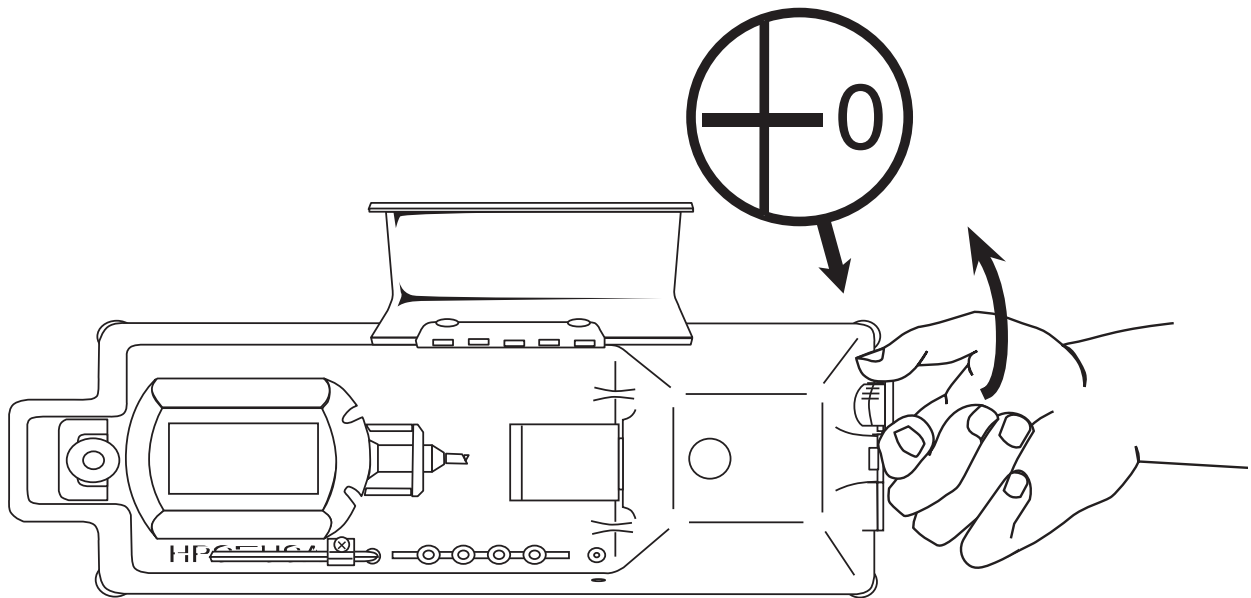
# 3.5

## CUTTING SECONDARY CUTS BY CODE

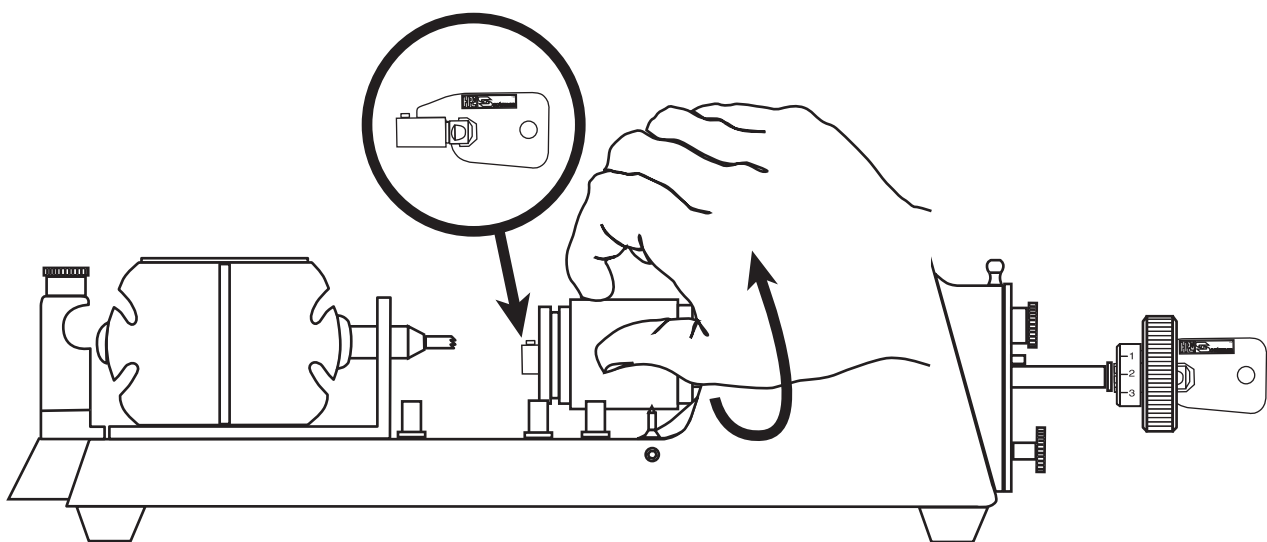




If key has secondary cuts, with the machine switched off, you must turn Elevation Knob to setting **“3B”**.



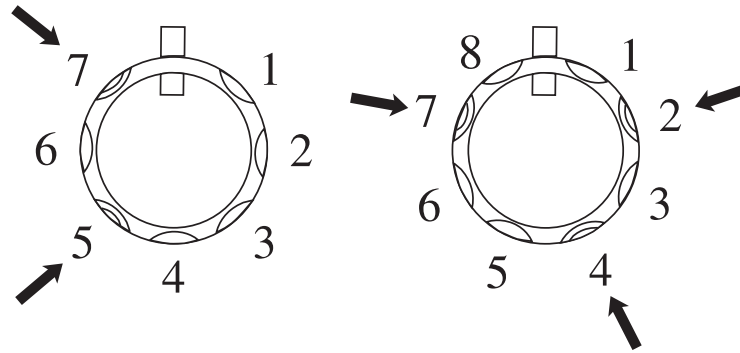
Reset the Decoder Knob back to “0” position.



With the machine shut off, loosen collet and re-index key (as detailed on pages 32-36).

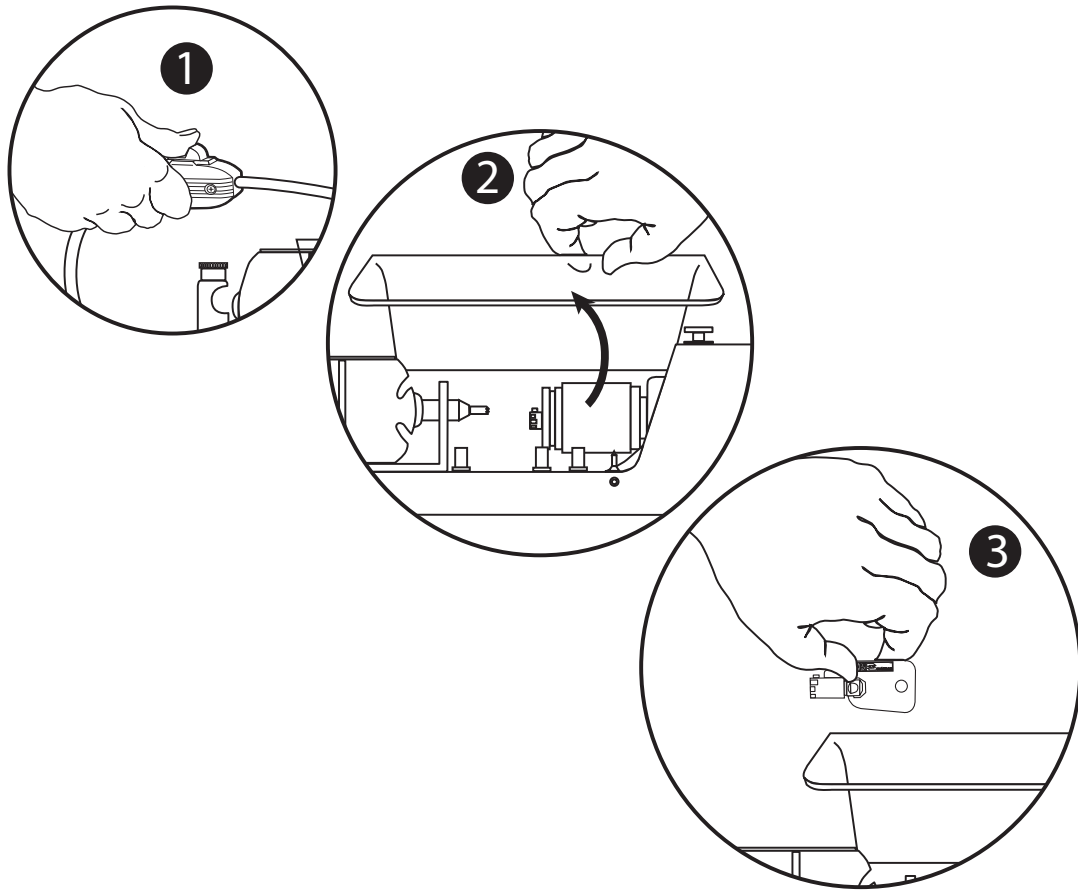
**NOTE:** Due to the changes of the elevation knob you must re-index key prior to cutting secondary cuts.

## Possible Patterns of Secondary Cuts



**Note:** secondary cut positions on key.

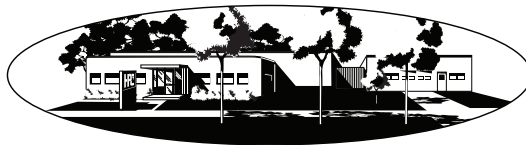
Noting the locations of the secondary cuts, continue cutting as detailed on pages 40-45, until all secondary cuts are complete.



After all cuts have been made, turn machine off and lift cover. Remove key, and deburr as needed.

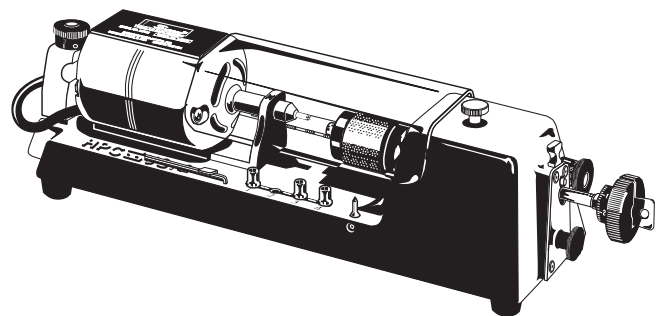
# HPC, INC.

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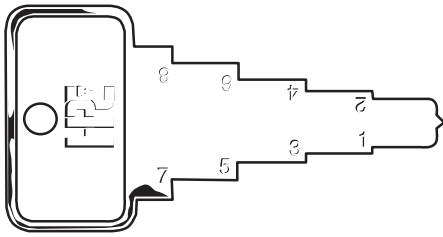
# 4.0

## DECODING A KEY



# Tubular Key & Pick Gauge

**No. TKPD-1**



HPC's TKPD-1 covers 8 depths. Depths 1 through 7 are regular depths; number 8 is for pin-within-a-pin. This tool is for use with standard, large, left hand, right hand, and UL (pin-within-a-pin) tubular keys.

## INSTRUCTIONS:

1. Read the key when the key is facing you. See Figs. 1 & 2. Keep the corners sharp for accurate readings.
2. Take a depth reading at the corner. See Fig. 3.

NOTE: the TKPD-1 is made of stainless steel; do not wire brush the gauge.

Manufacturer depths are per Chicago Ace®. See chart below.

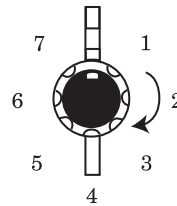


Fig. 1  
Fort Lock

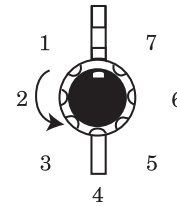


Fig. 2  
Chicago Ace®

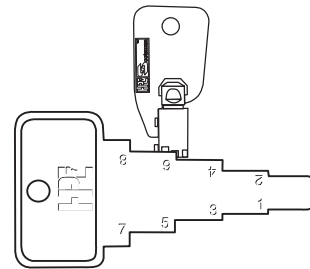


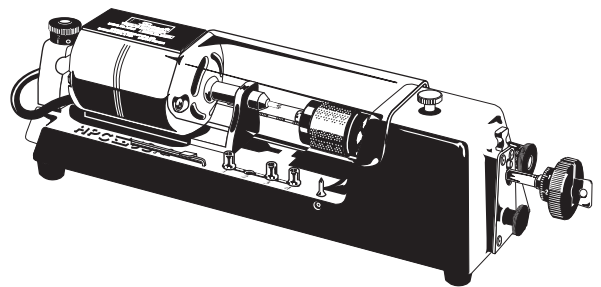
Fig. 3

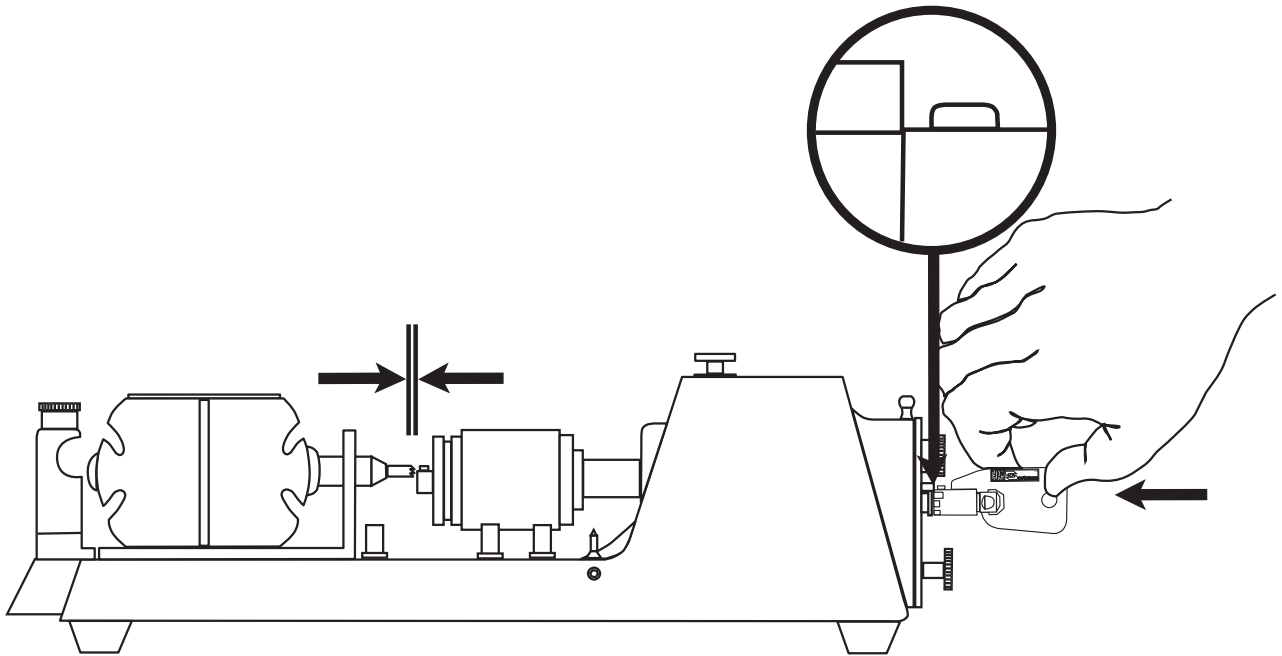
Tubular Key & Pick Decoder	Chicago Ace Depth	Fort Lock Depth	Depth in inches	Depth in MM
1	1	0	0.016	0.41
2	2	1	0.032	0.81
3	3	2	0.048	1.22
4	4	3	0.064	1.63
5	5	4	0.080	2.03
6	6	5	0.096	2.44
7	7	6	0.112	2.84
8	8	7	0.128	3.25



# 5.0

## CUTTER REPLACEMENT

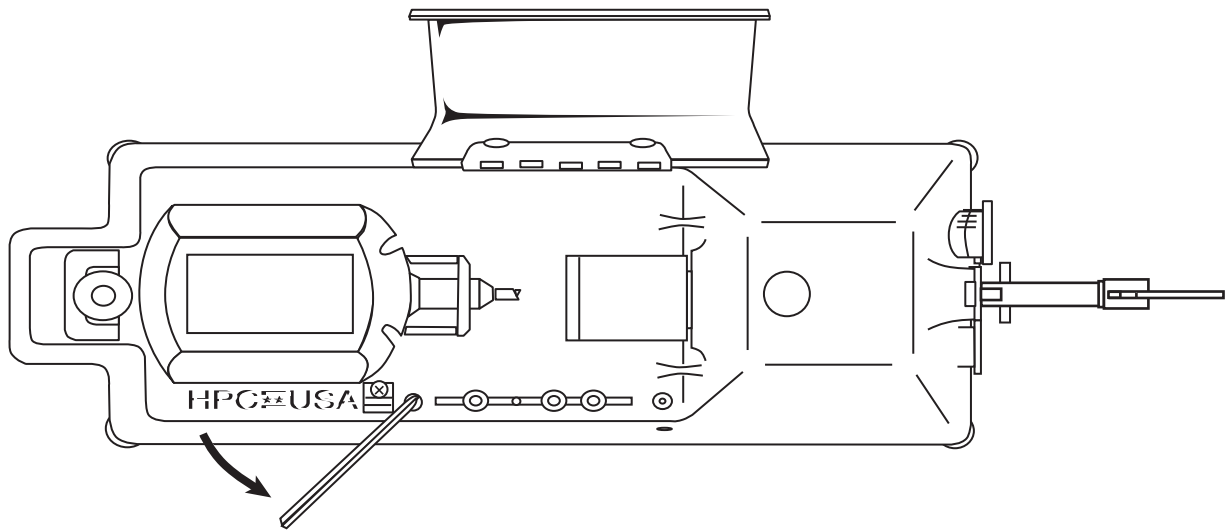




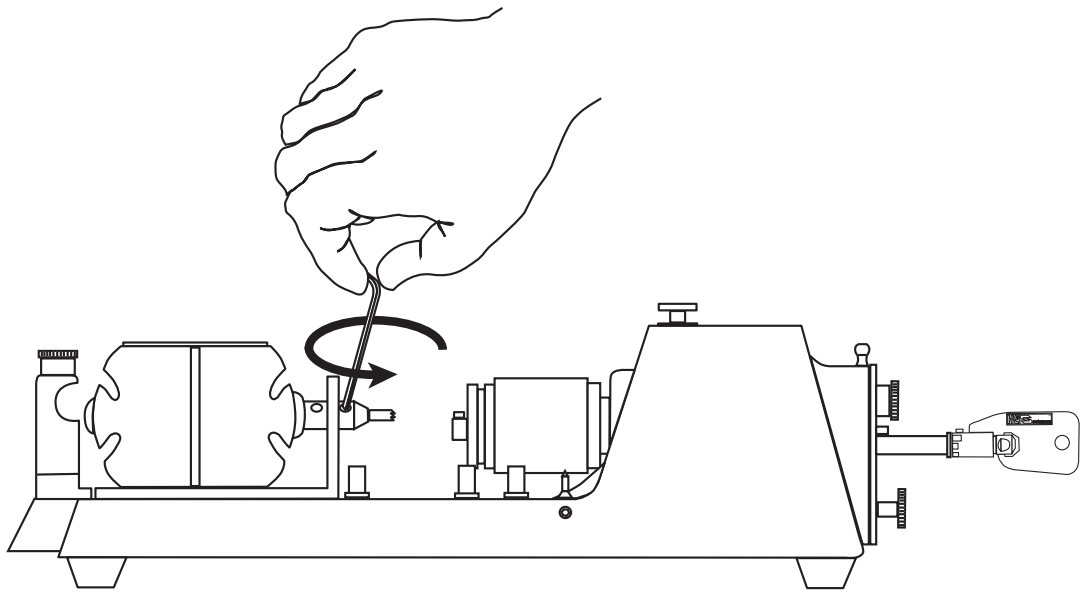
Switch to “off” and unplug the machine. Before removing dull cutter, verify the setup is still accurate using (2) blank keys.

**NOTE:** Do not remove keys.

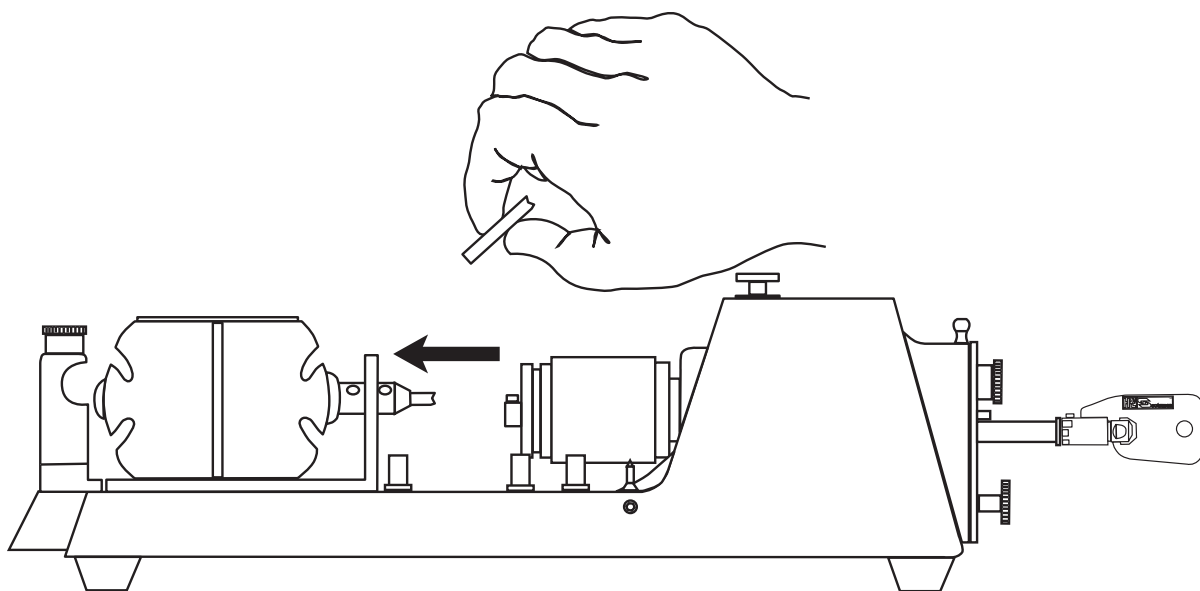
- Refer to duplication section for specifics on indexing.



Using the wrench provided...

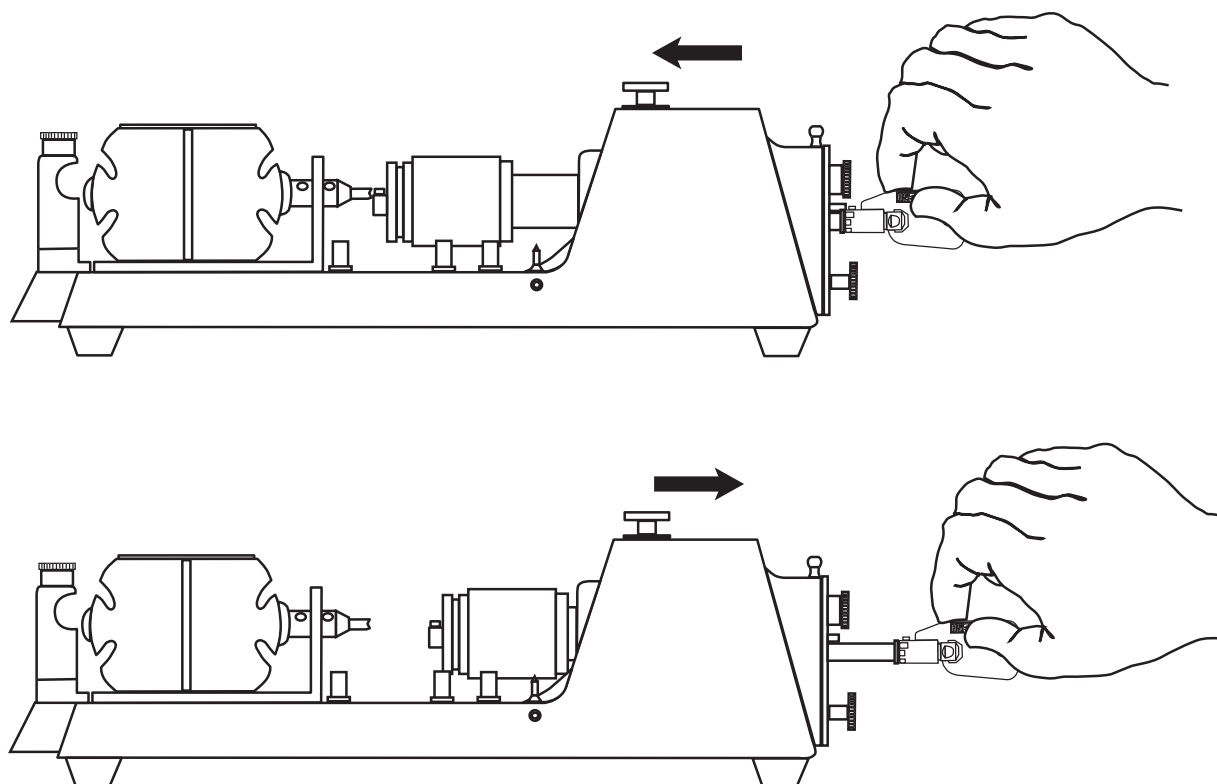


Loosen cutter set screw.



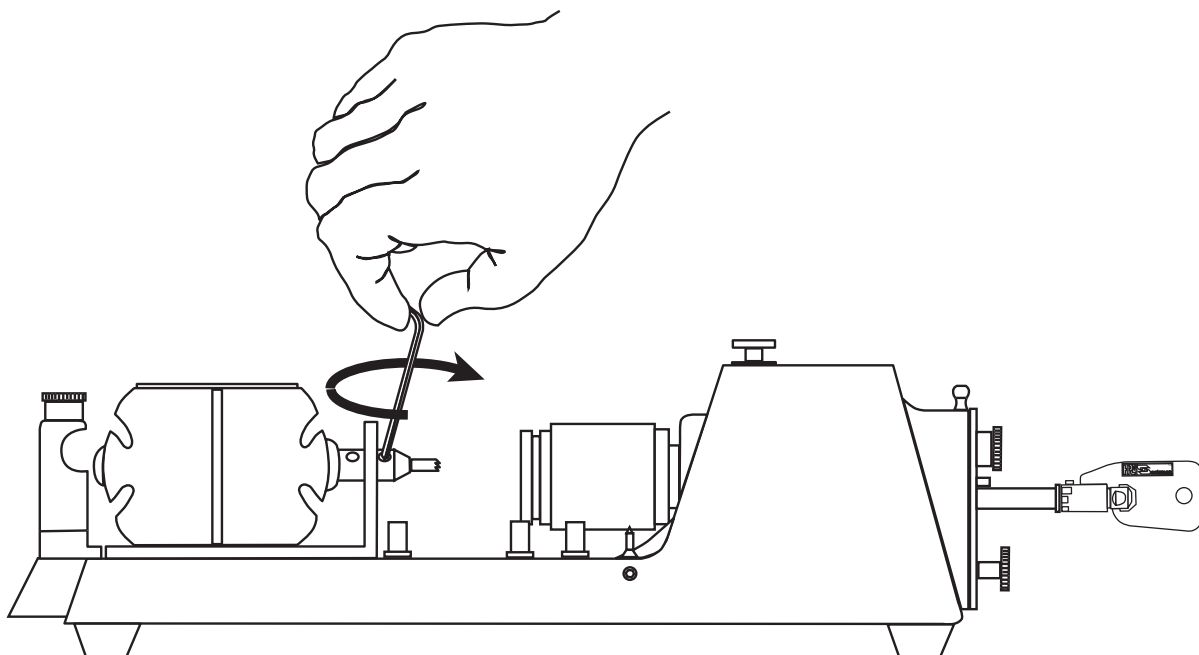
Remove dull cutter and replace with new cutter (Part No. 22-01). Then, lightly but firmly tighten set screw.

**NOTE:** Do not overtighten as cutter needs to move during indexing to allow for proper calibration.



Push key firmly inward to full depth stop. This will move cutter to correct position.

**NOTE:** Cutter should just barely scrape key blank when turned by hand.



Tighten final set screw.

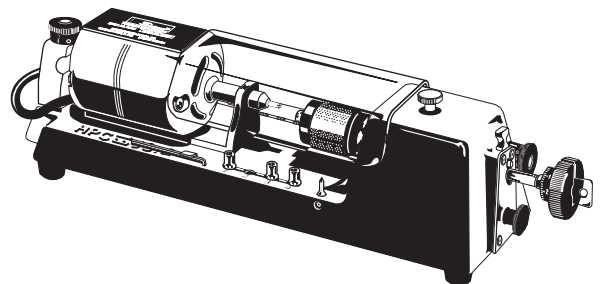
**visit us online at:  
[www.hpcworld.com](http://www.hpcworld.com)**



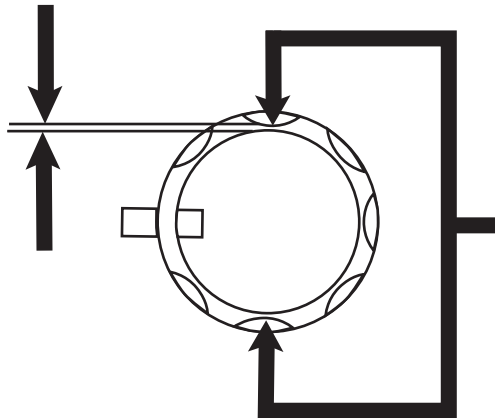


# 6.0

## CUTTER ADJUSTMENT

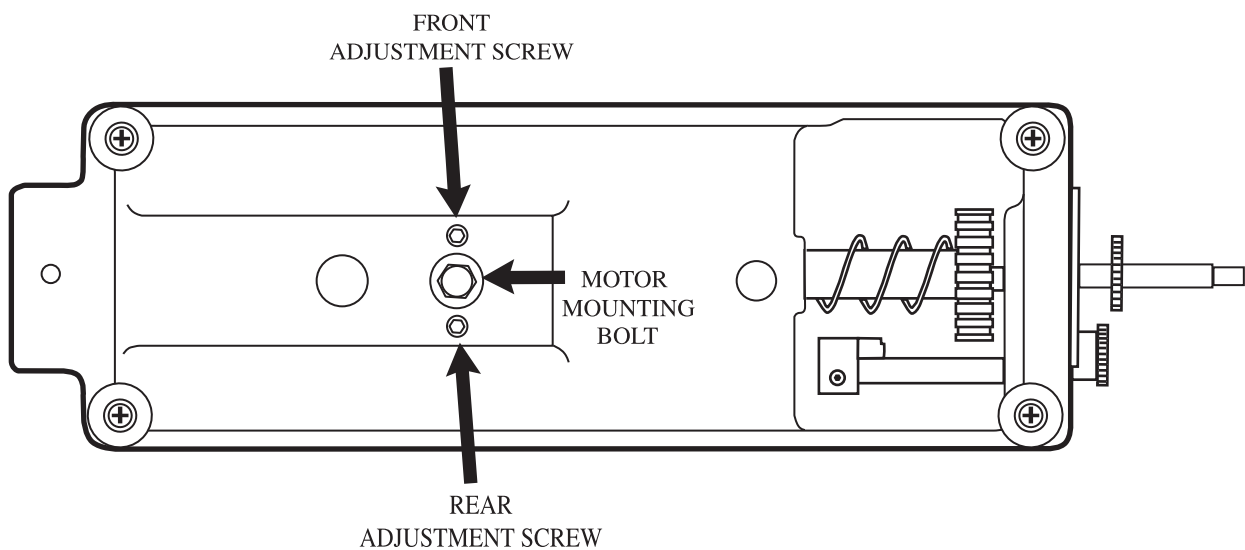


WEB THICKNESS  
.004" (0.1mm) to  
.007" (0.18mm) TYPICAL

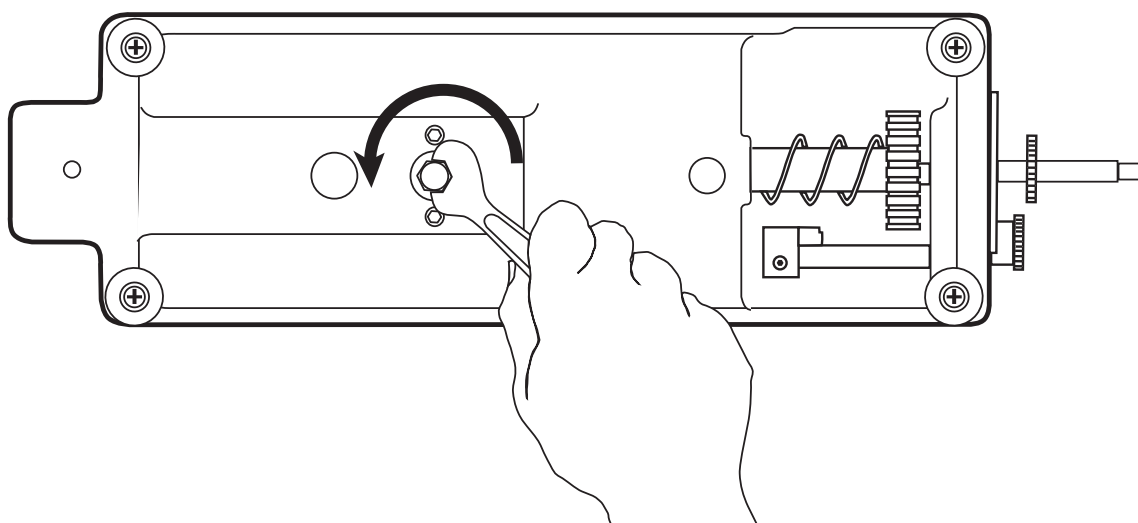


DIM. X ON A  
STANDARD KEY:  
.320" (8.13mm) to  
.326" (8.28mm)

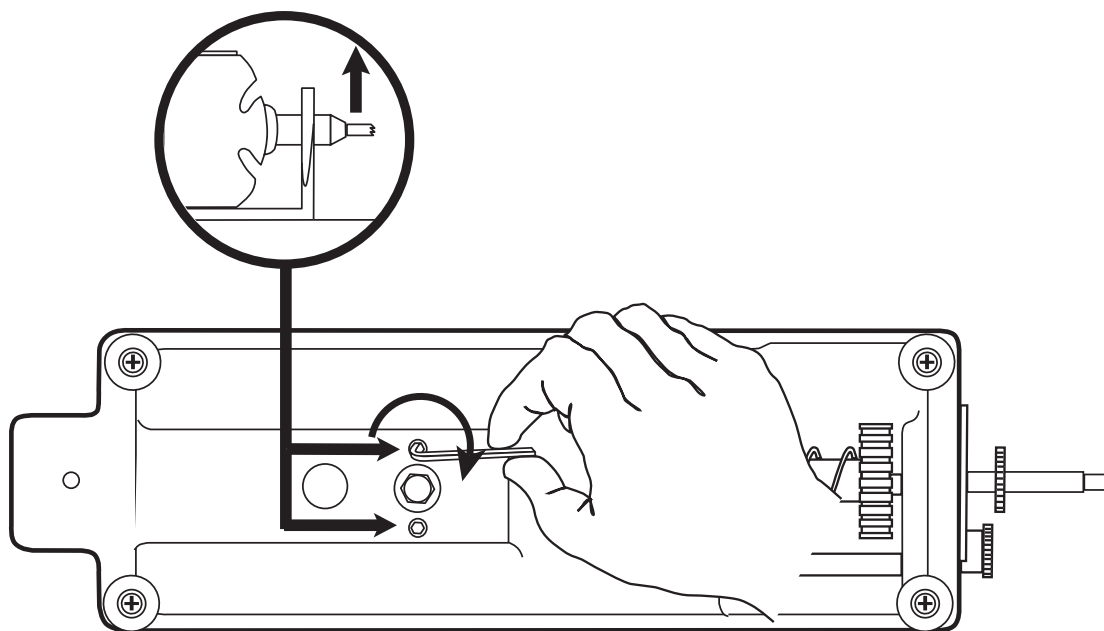
Cut sample key and check distance across cuts (Dim. X) using dial caliper. **If** outside of range, proceed as follows...



Switch “off” and unplug the machine.  
Note adjustment screws and motor mounting bolt.



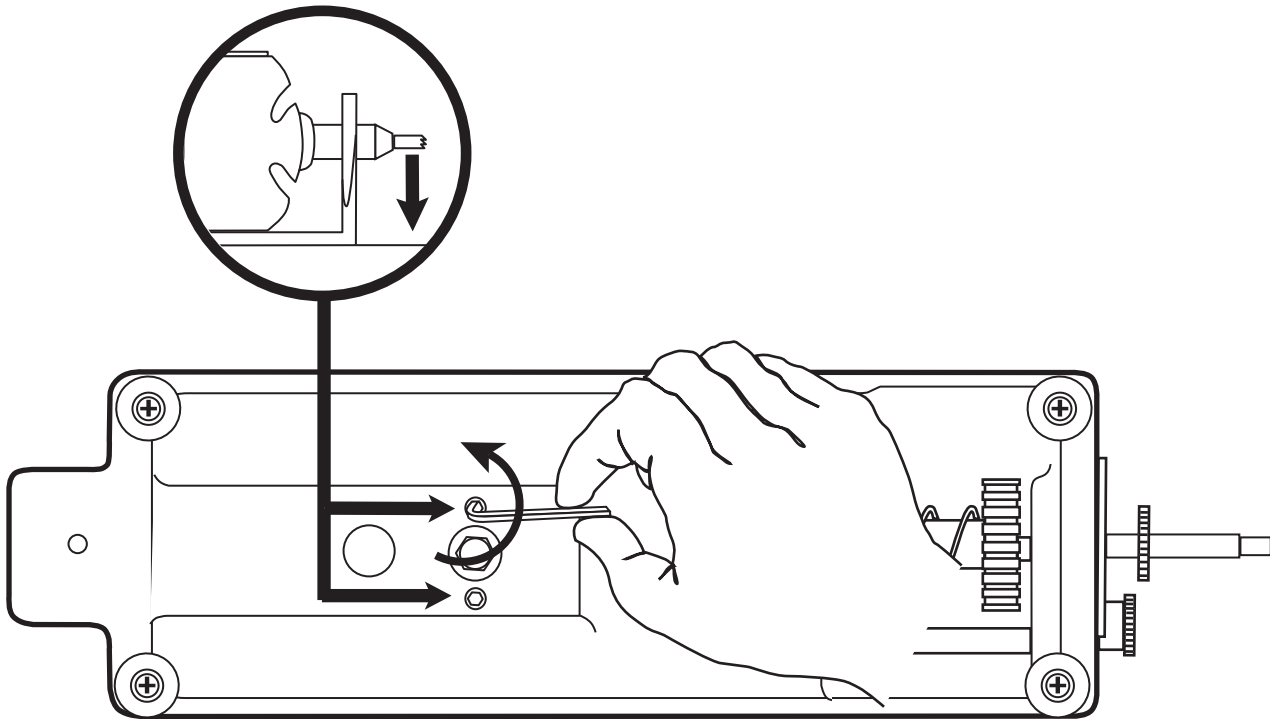
Loosen motor mounting bolt 1/4 turn.



**If Dim. X is less than .320" (8.13mm):**

Move cutter up and increase web thickness by turning both adjustment screws clockwise.

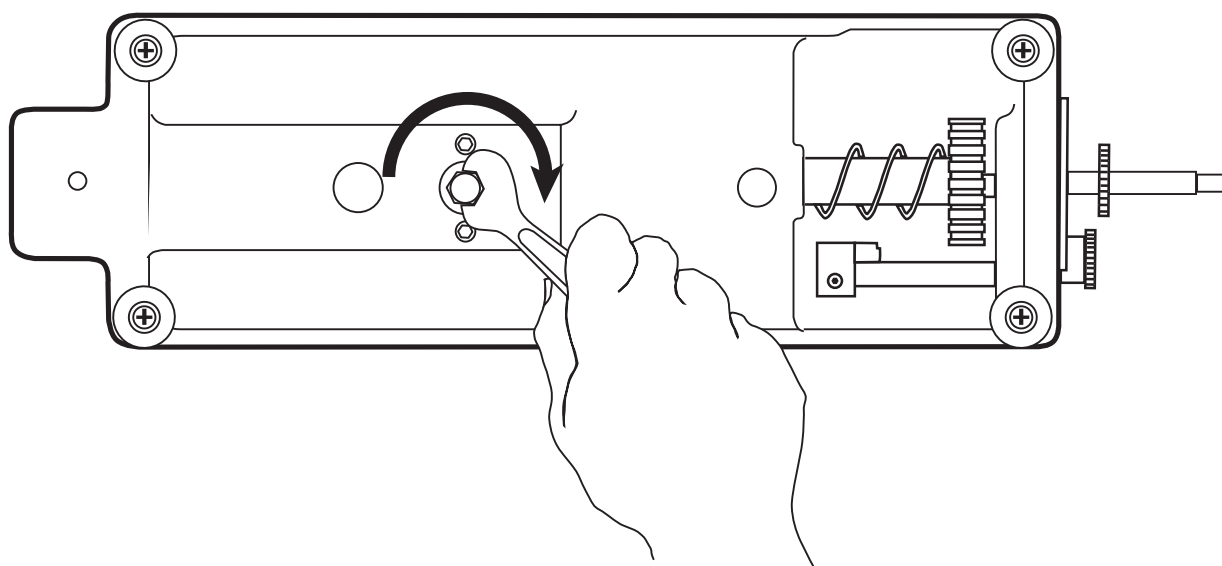
**Note:** a 1/8 clockwise turn will increase web thickness by approximately .005" (.127mm) and increase Dim. X by approximately .010" (.254mm).



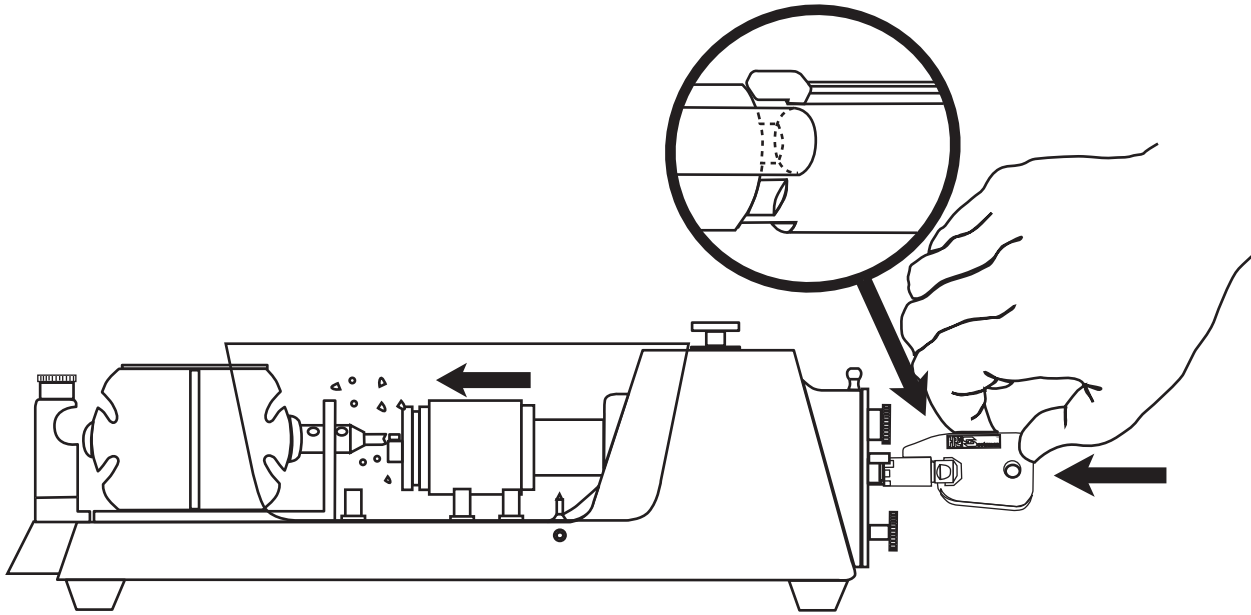
**If Dim. X is greater than .326" (8.28mm):**

Move cutter down and decrease web thickness by turning **BOTH** adjustment screws counterclockwise.

**NOTE:** a 1/8 counterclockwise turn will decrease web thickness by approximately .005" (.127mm) and decrease Dim. X by approximately .010" (.254mm).



Retighten motor mounting bolt.



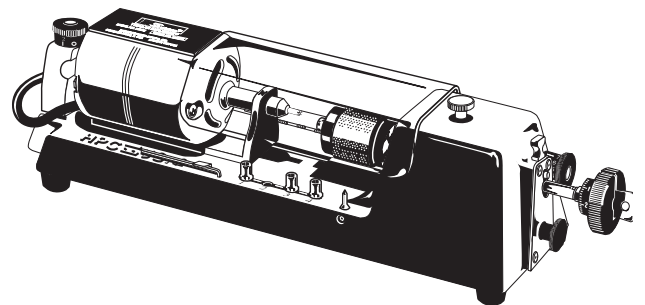
Cut key, and check Dim. "X".

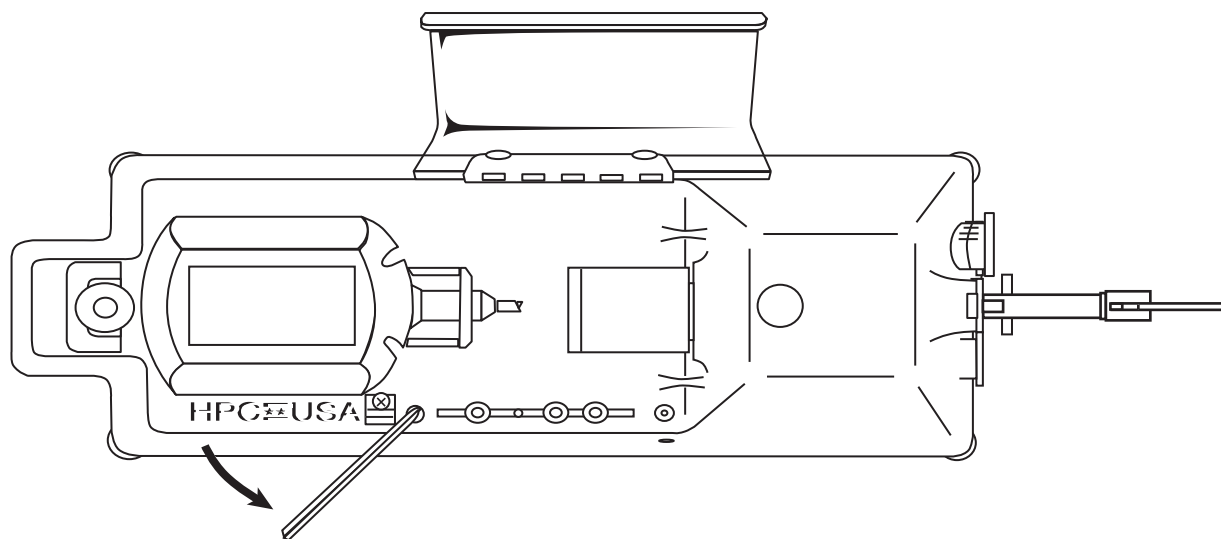
**Note:** To minimize waste of key blanks during adjustment, try to start with cutter being too high. This enables you to cut and recut keys until proper adjustment is obtained.



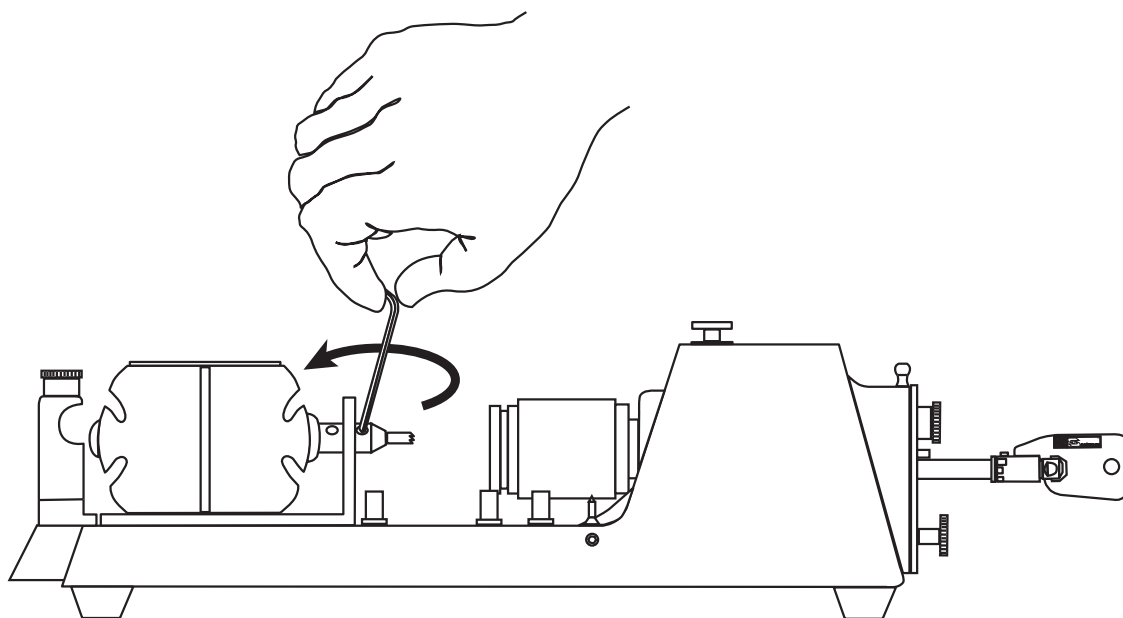
# 7.0

## CUTTER ALIGNMENT

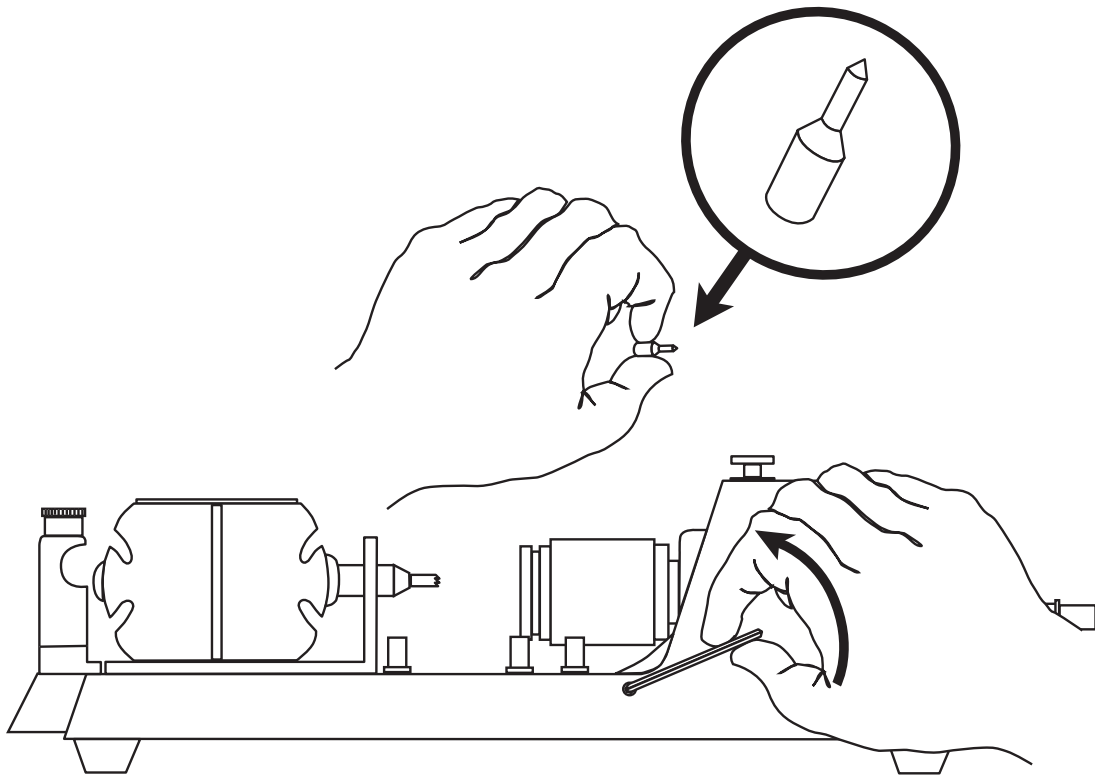




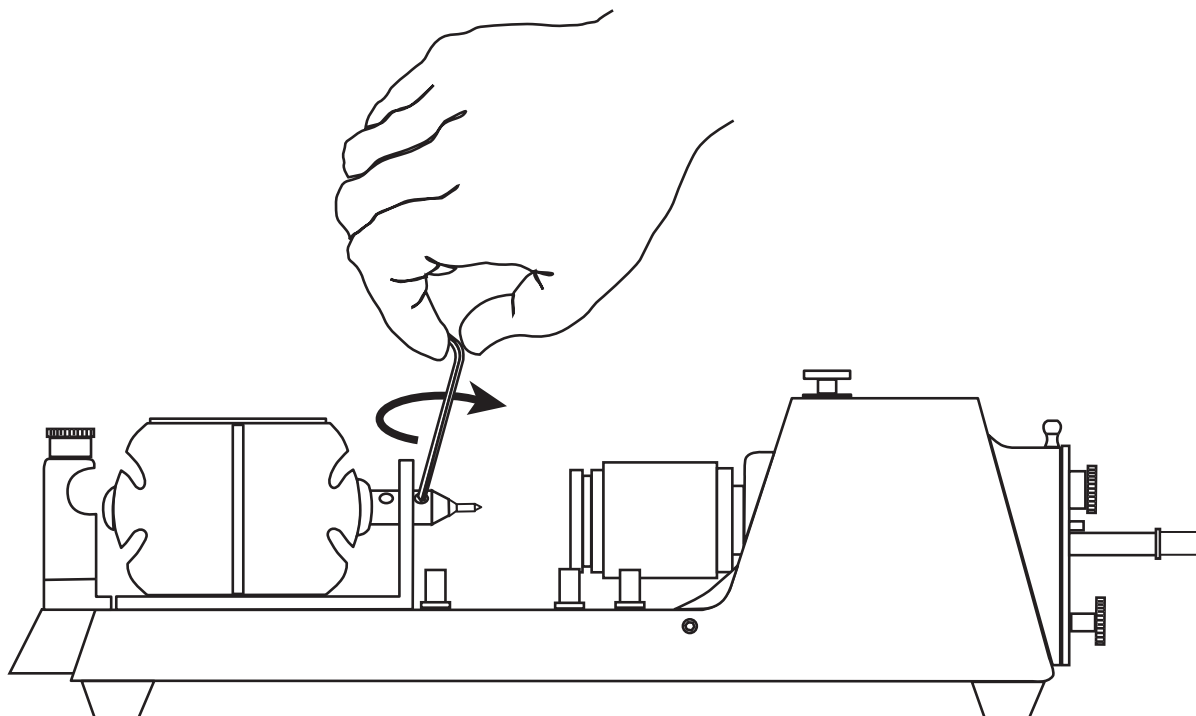
Switch “off” and unplug the machine. Using the wrench provided...



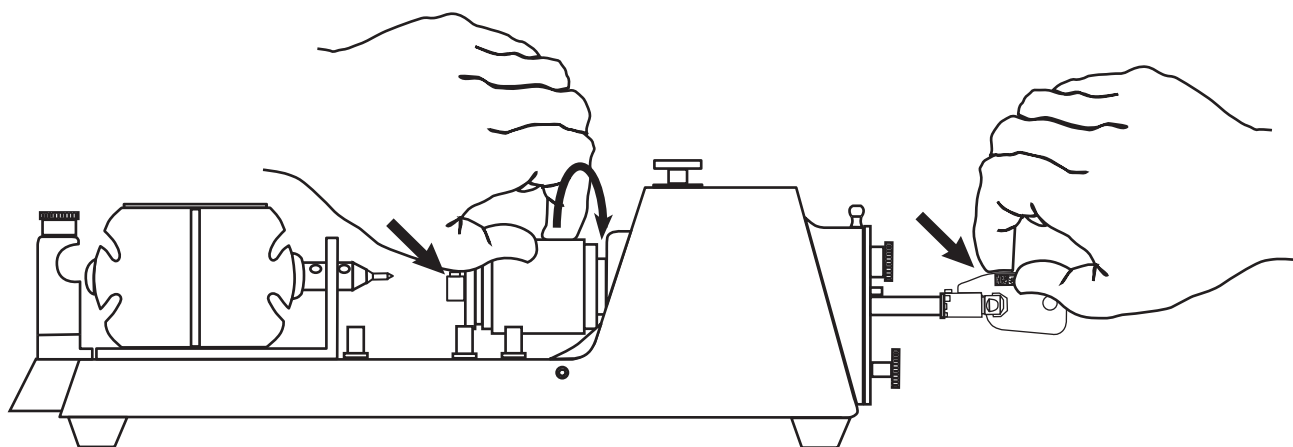
Loosen and remove cutter.



Loosen and remove alignment pin.



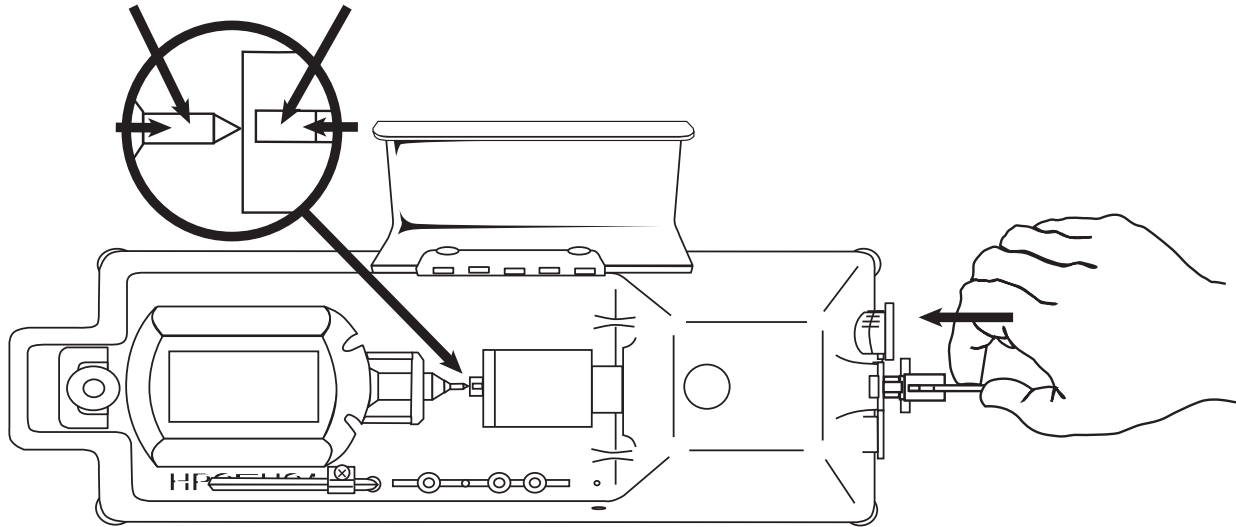
Replace cutter with alignment pin.



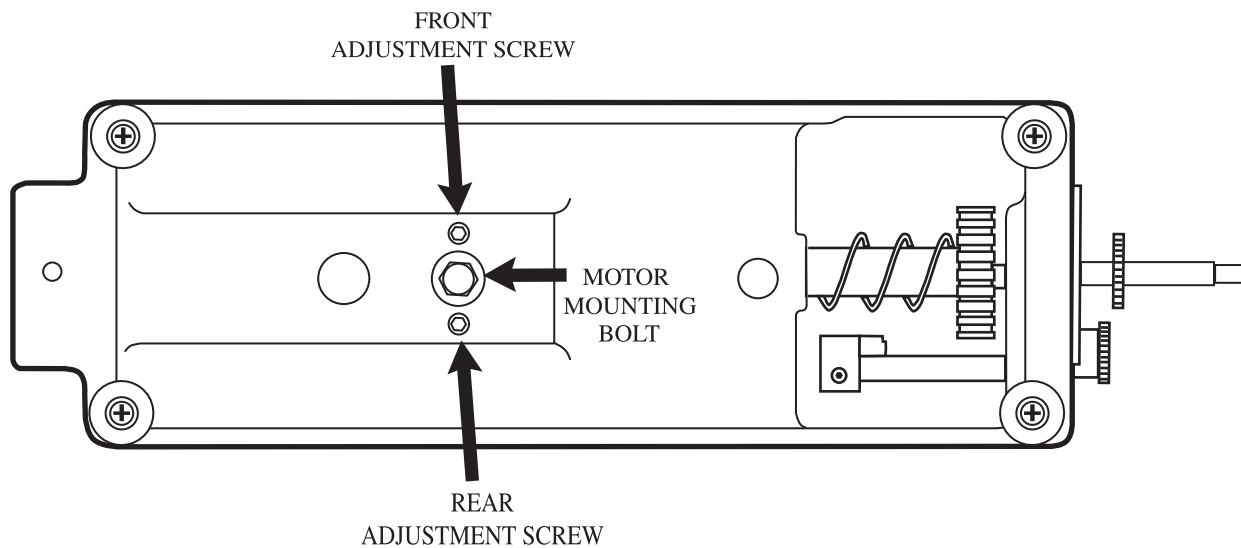
Load (2) blank keys.

### CORRECT ALIGNMENT:

Alignment Pin    Key Tang

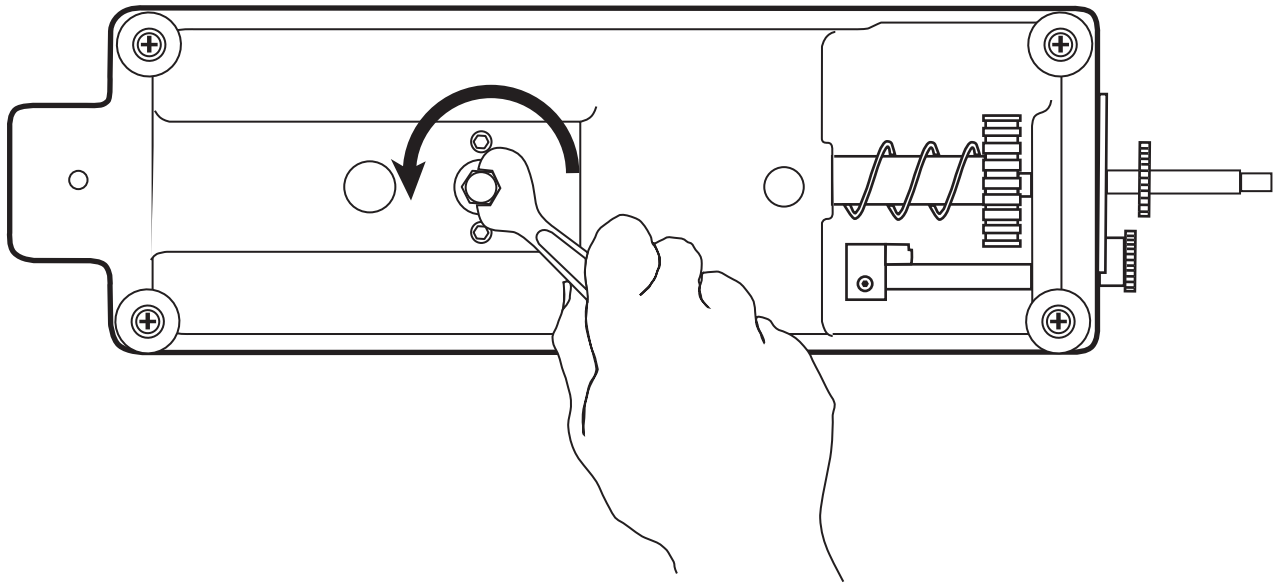


Push shaft to engage pin and check to see if the pin is centered on tang. If it is not centered, proceed as follows...

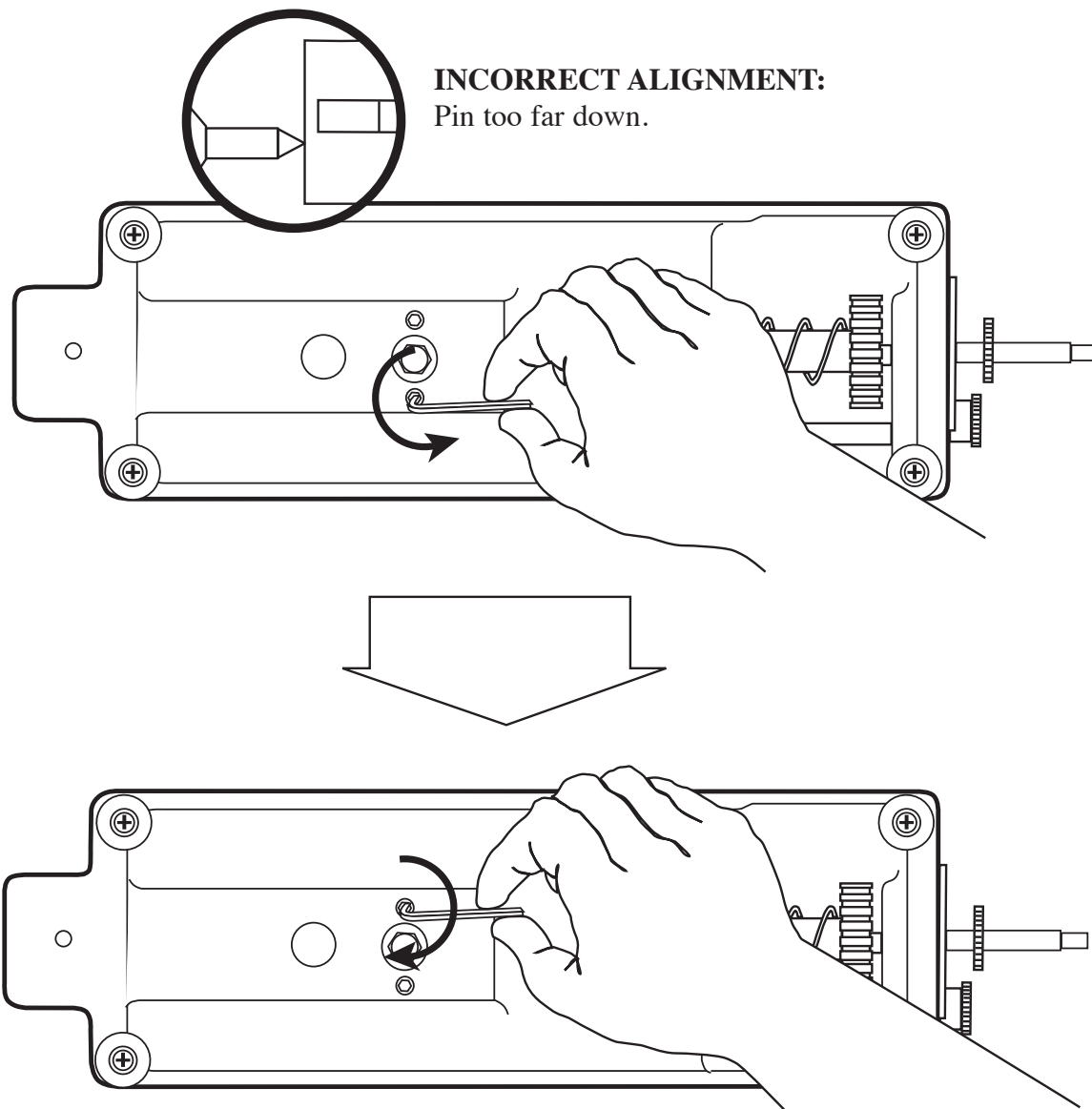


Switch “off” and unplug the machine. Note adjustment screws and motor mounting bolt.





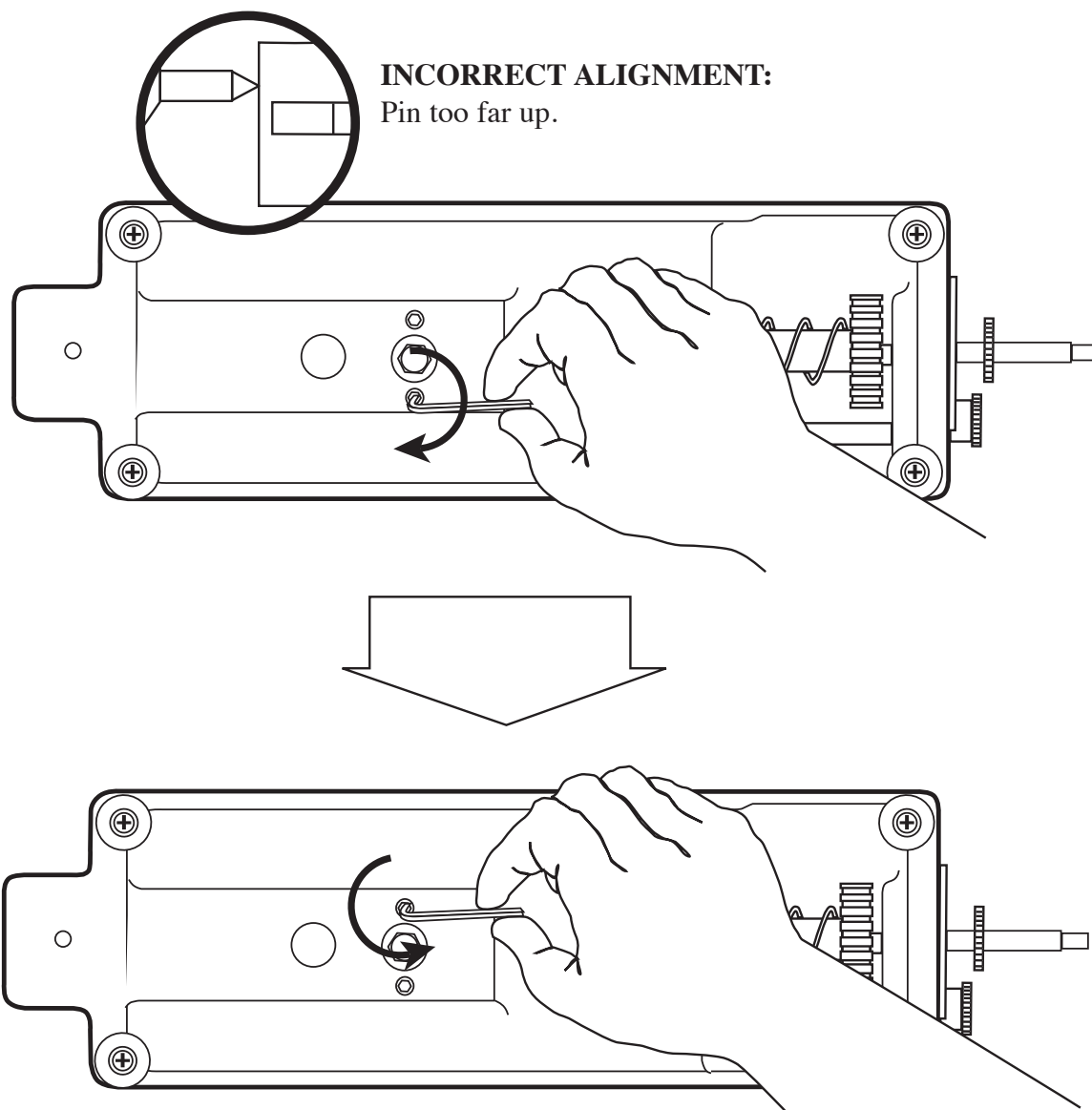
Loosen motor mounting bolt 1/4 turn.



**If Pin is off in a *downward* position:**

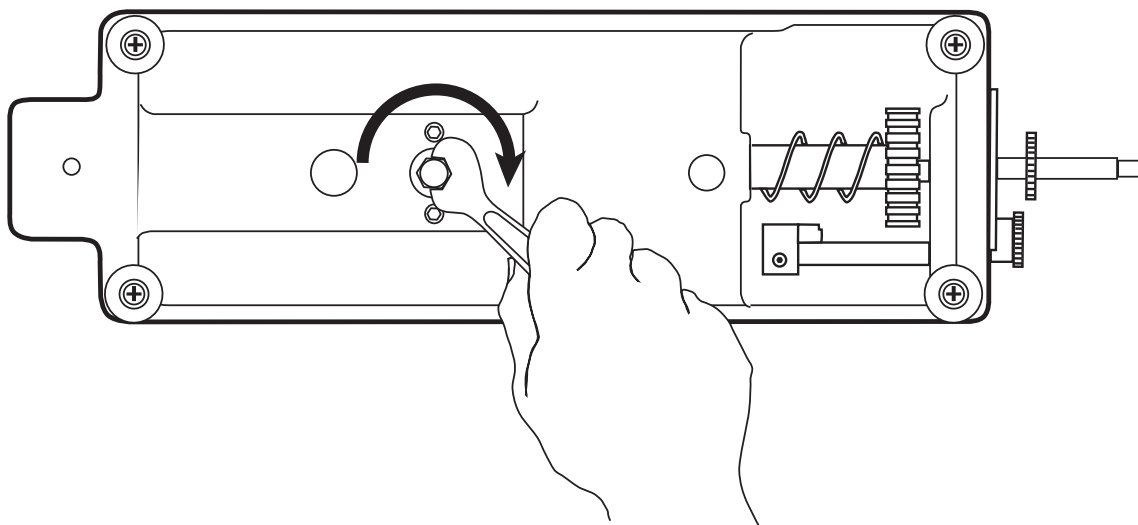
Turn bottom screw counterclockwise 1/4 turn, and turn top screw clockwise 1/4 turn.

**Note:** If pin is off in an upward position, see next page.

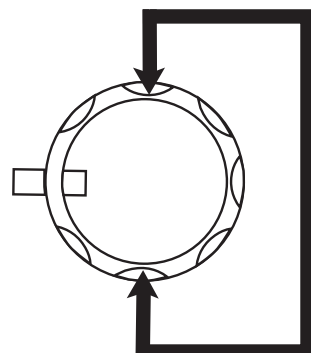
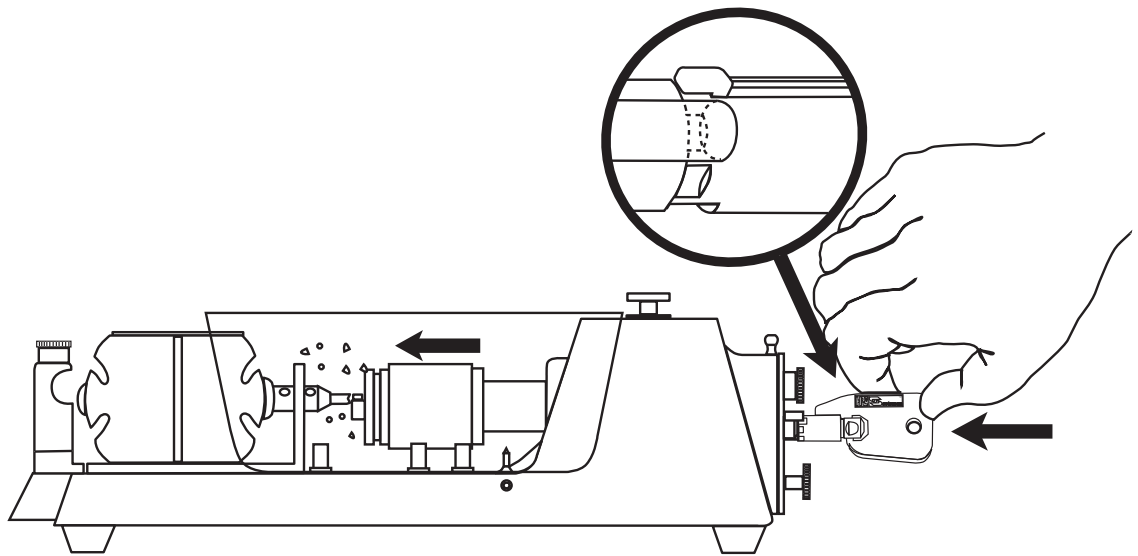


**If Pin is *off* in a *upward* position:**

Turn bottom screw clockwise 1/4 turn, and turn top screw counterclockwise 1/4 turn.



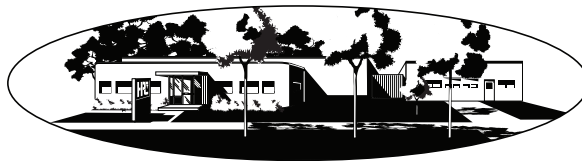
Retighten the motor mounting bolt, and check alignment.  
If alignment is not correct, repeat preceding steps as necessary.



STANDARD KEY:  
 $.320" \text{ to } .326" = \text{Dim. X}$

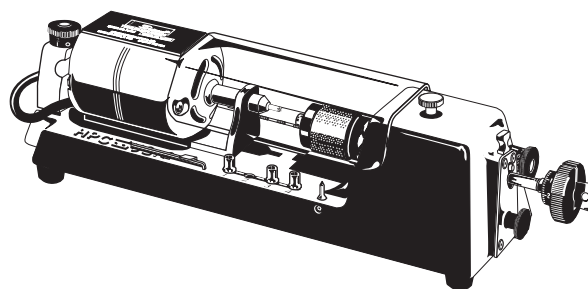
**Note:** Be sure to check web thickness. You may need to readjust **after** alignment is complete.

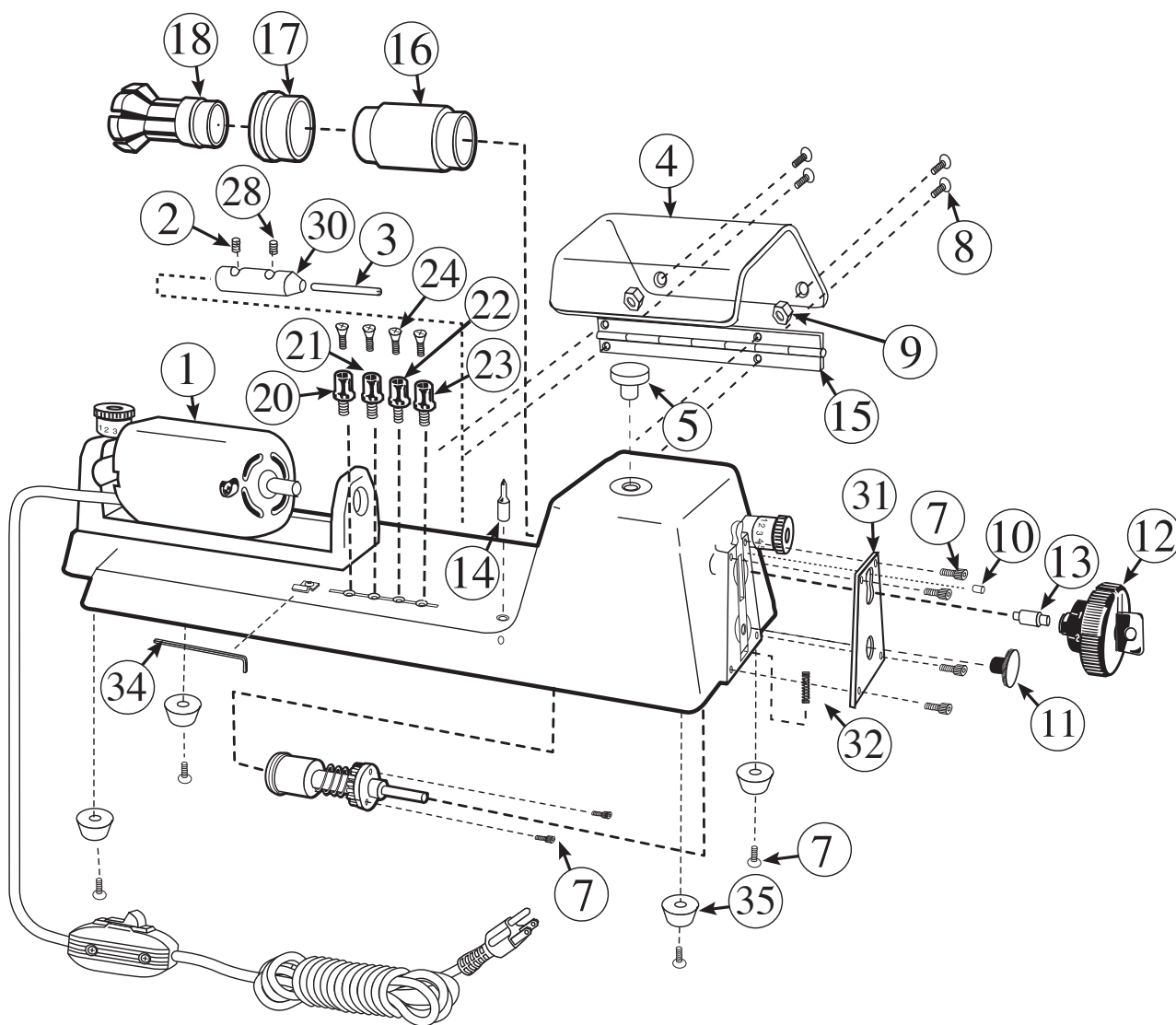
**Expect Quality...  
Demand HPC.**



# 8.0

## EXPLODED VIEW AND PARTS LIST





**HPC/Scotsman No. 747XU Tubular Key Cutting  
Machine Exploded View**

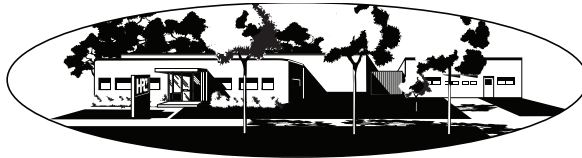


## No. 747XU Parts List

Drawing No.	Description	Cat. No.
1.	Motor, 120VAC	22-57
	Motor, 240VAC	22-59
2.	Socket Head Set Screw No. 10-32 x 3/16 Long	22-14
3.	Carbide Cutter	22-01
4.	Safety Shield	11-04
5.	Position Lock Pin	22-58
7.	Flat Head Cap Screw No. 6-32 x 1/4 Long	22-12
8.	Button Head Cap Screw 10-32 x 1/4 Long	22-18
9.	Hex Nut No. 6-32	22-27
10.	Stop Pin	11-00
11.	Cinch Bolt	11-29
12.	Position Indicator Knob Assembly	25-07
13.	Alignment Sleeve	11-42
14.	Alignment Pin	11-08
15.	Hinge	11-03
16.	Collet Nut	11-26
17.	Compression Ring	11-27
18.	Key Collet	11-28
20.	Modified Standard Extension	11-38M
21.	137-A Extension (UL)	11-39
22.	137-S Extension (Small)	11-40
23.	137-F Extension (Fort)	11-41
24.	Modified Screw	11-43
28.	Socket Head Set Screw No. 10-32 x 3/8 Long	22-56
30.	Mandrel	25-04
31.	End Plate	11-35
32.	Spring 1/8 Dia. x 1/4 Long	22-44B
34.	Allen Wrench	WRENCH-4
35.	Rubber Feet	22-11

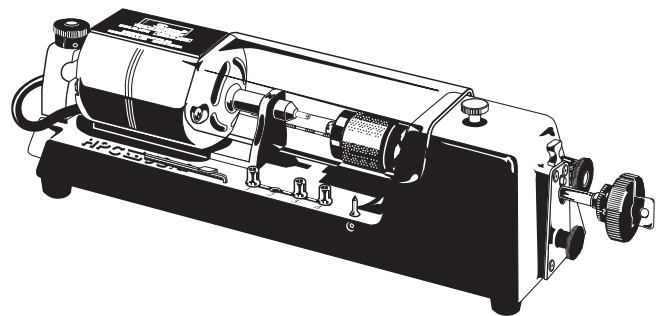


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# 9.0

## PREVENTIVE MAINTENANCE, WARRANTY, AND SERVICE CENTER INFORMATION



## LUBRICATION, PREVENTIVE MAINTENANCE, REPAIRS and WARRANTY

1 -**WARRANTY** - The Tubular Duplicode™ Key Cutting Machine is fully warranted for 90 days from the date of purchase, against factory defects in material and workmanship. Mail the Warranty Card and a copy of your invoice to us immediately, to validate your warranty.

Should your machine require factory repairs, please contact the HPC Service Center.

During the 90 day warranty period, you will be billed for handling and shipping only.

2 -**MOTOR** - The motor is equipped with sealed bearings that require no lubrication.

3 -**BEARINGS AND SLIDING SURFACES** - These are to be given a light coat of grease at least every 6 months.

4 -**EXPOSED STEEL SURFACES** - All remaining exposed steel shafts, cutter, etc., should be sprayed with WD-40 or equivalent light oil at least every 6 months. Wipe off any excess.

5 -**CLEANING** - Remove all brass chips, dirt and grit from the surface of your machine daily, with a soft bristle brush. Take particular care in keeping the key vise jaw area clean and free of all residue build-up.

# HPC SERVICE CENTER

If your HPC Key Machine should require service, please note the following information:

**HOURS:** The HPC Service Center answers questions involving key machine repair and replacement parts Monday through Friday from **8:00 am to 3:30 pm Central time**.

Please call **800-323-3295** (from the U.S. and Canada) or **847-671-6280** (from other countries).

**REPAIRS:** We recommend the replacement of cutters, brushes and external parts, the preventive maintenance and recalibration (as outlined in this manual) be the only repairs or adjustments that are done by the user. Internal parts and mechanisms should be factory-repaired only. Additional repair charges may be incurred by attempting to make these types of repairs by yourself.

**FACTORY SERVICE:** If you need to send your HPC key machine in for repair, first call the HPC Service Center to obtain a Repair Order number, then follow these instructions:

Include a letter explaining the problem you are having, as well as any other work you want done on the machine. Make sure your business name, address and phone number, as well as the name of the contact person are on the letter.

Your machine should be equipped with an HPC cutter when it is sent in for repairs. If you are sending in a Blitz™ or CodeMax™ machine also include the Black Horseshoe Tip Stop to insure proper tip gauge calibration. Please do not send in any other accessories (such as other cutters and code cards).

Pack the machine securely in a box strong enough to prevent damage during shipping (preferably the original box).

The Repair Order Number should be marked on the outside of the box.

All machines must be shipped prepaid. Collect shipments will not be accepted.

Our shipping address is:

**HPC, Inc.**  
**Attn. Service Center**  
**3999 N. 25th Avenue**  
**Schiller Park, IL 60176 USA**

**REPAIR CHARGES & ESTIMATES:** Upon receipt and evaluation of your machine our technicians will provide a written estimate (by fax) of the repair charges. Some problems may be detected only while the repair work is being done. If after informing you of the repair estimate it becomes apparent that the cost will be higher, you will be notified of the additional charges before any additional work is done.

**REPLACEMENT PARTS:** Key machine parts can be purchased through an Authorized HPC Distributor or directly from the HPC Service Center. When ordering parts over the phone, please have the part numbers and descriptions ready to expedite the ordering process. A parts listing and an exploded view drawing is included in this manual. If the parts are needed urgently, express processing is available at an additional charge.

**PAYMENT:** Payment for parts and repair is required at the time of repair and before the parts are shipped. We accept payment by credit card (Visa, Mastercard or Discover) or by check. Repaired machines and parts can also be sent C.O.D. with an extra charge. If you wish to have your Authorized HPC Distributor billed for the parts or repairs, the distributor must call us with approval of the billing and provide a purchase order number for the parts or work being done, before the machine is repaired or parts are shipped.

Unless otherwise specified, key machines that are not under warranty will be shipped C.O.D. with an extra charge after the repairs have been made.

**LOANER MACHINES:** Sorry, but we do not have loaner machines available.



**TUBULAR DUPLICODE™**  
**747XU**

